

Safety, Health, and Environmental Auditing

A Practical Guide



SIMON W. PAIN



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For Anne
With thanks for a lifetime of inspiration

Preface

Most people would agree that health and safety is important. Those who consider environmental protection also to be important are probably a smaller, but rapidly growing number. Unfortunately, that is often where all interest in these subjects ends. It is all too easy to say what should have happened after there has been some adverse event such as an accident, injury, or environmental release, but why cannot we be wise enough to recognize these shortcomings before things go wrong, and therefore avoid hurting either people or the environment?

Many competent organizations have extensive safety, health, and environmental instructions in place, but still find that things often go wrong. The problem is one of human behavior. People like to make life easy for themselves and therefore sometimes ignore the instructions, or perhaps the instructions themselves are out of date. In the latter part of the last century it was realized that this was the cause of production “quality” problems, and quality improvement processes were introduced, which culminated in such international standards as 9001, 14001, and 19011. It was realized that having good-quality instructions was not enough. What really mattered was how well people adhered to those procedures. A crucial part of a good-quality process is the checking (or auditing) step to ensure that people are complying with the procedures.

It was quickly realized that a similar checking process could be of great benefit in respect to compliance with safety, health, and environmental management procedures. In the 1980s some leading companies started to carry out environmental audits and later on branched into health and safety. The results of these audits were dramatic, and often resulted in as much as a tenfold reduction in incident frequency rates. Consultants quickly realized that there was a demand to be satisfied in helping organizations improve their environmental, health, and safety performance and started to provide high-quality auditing services. The consequence for the organization was that they achieved a significant improvement in their performance, but it sometimes came with a rather large price tag in the form of consultant fees.

The purpose of this little book is to provide “down to earth” guidance for managers and specialists in those organizations who are committed to improving their safety, health, and environmental performance, but either are not sure where to start or cannot, or do not wish, to employ consultants to do this for them.

The book is intended for those managers and safety/environmental specialists who have some level of safety, health, and environmental awareness. It has been written in such a way that it is easy to dip in and out of the short chapters to refresh your memory, prior to or during an audit. A set of audit protocols, covering sixty different aspects of environmental, health, and safety management, is provided in Appendix 2, for those who have not developed their own. An electronic copy of these protocols is available on the enclosed CD-ROM to allow for easy copying and printing for the audit. Frequently needed practical administrative checklists that may be useful when planning and conducting the audit are found in Appendix 1.

For those who prefer an all-electronic audit checklist, a copy of the Plaudit 2 audit protocol is to be found on the enclosed CD-ROM. This allows the auditor to complete his or her notes in real time and provides a continuous graphical audit compliance score. It must be remembered that the electronic protocol is merely a supporting tool and is no substitute for a detailed understanding of how to prepare for and how to conduct the audit.

Good luck!

About the Author



Simon W. Pain is an independent Safety, Health, and Environmental Management consultant based in Scotland. He has a wealth of health, safety, and environmental management experience in various manufacturing industries gained over the last thirty-seven years.

Simon is a chartered mechanical engineer with more than thirty-two years experience in senior management positions with British Steel, ICI, and DuPont's engineering, manufacturing, research, and corporate functions. He has been advising company executives at the board level on safety, health, and management issues for the last twelve years. He spent

many years as Divisional Safety, Health, and Environmental Manager for ICI and DuPont; the latter is widely regarded as the world benchmark company for health and safety standards. During the last ten years he has developed novel techniques in health and safety training and communication, which were commended by the Institute of Occupational Safety & Health in November 2004.

As a consultant, Simon specializes in raising awareness and motivating senior managers to achieve a paradigm shift in health and safety awareness. He does this by using the high-impact approach and making the subject interesting and fun.

He is an expert in auditing, especially at the management level and personally designed and developed the ICI audit protocol system to ensure that auditing standards were consistent. As a Det Norske Veritas-trained auditor he has led audits not only in the United Kingdom, but also in the United States, Japan, Belgium, and the Netherlands. He regularly carries out lectures and training for health, safety, and environmental auditing.

He is a Fellow of both the U.K. Institute of Mechanical Engineers and the Institute of Energy and a chartered member of the Institute of Occupational Safety & Health. He was also a member of the U.K. government's Energy Best Practice Committee and a board member for the Solway River Purification Board until the formation of the new Scottish Environment Protection Agency.

Simon graduated in Mechanical Engineering from the University of Birmingham and obtained his postgraduate qualifications in health and safety from the University of Loughborough.

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1 Elements of a Good Safety, Health, and Environmental System

A “system” is “an environment exploiting, restricting and repressing individuals.” So claims the *Collins Concise Dictionary*. Surely this cannot be the intention of safety, occupational health, and environmental systems? Perhaps a more appropriate definition would be “a way of doing things.” However, *Collins* is right in suggesting that systems may not necessarily be a help; they can on occasion be a hindrance. We have all experienced the uniformed official who insists on rigidly applying outdated rules with the claim that it “is more than his job’s worth not to comply!” Nevertheless, systems are needed in organizations whether they cover the control of finances, the payment of employees, the purchase of goods, the control of product quality, or the application of safety, health, and environmental (SHE) standards. Although we may sometimes doubt it, systems are created to simplify activities that are repeated and are essential to the purpose of the organization. They are intended to ensure that we benefit from the learning and experience of others, so that we do not all have to go back and reinvent the activity from first principles. Even when formal systems do not exist, it is human nature for us to want to make things easy for ourselves, so we often tend to devise our own way of doing things.

The role of the system in collating experience and learning is an essential component when systems are intended to prevent harm occurring to people or the environment around us. This is why the application of systems to SHE protection is of such importance and explains the recent explosion in regulatory controls in this area from governments around the world. Indeed, governmental controls are now so complex that new systems have to be introduced to try and simplify the previous systems. It is hardly surprising that *Collins* defines these systems as restricting and repressing individuals.

The problem with any system is that it tends to start to deteriorate from the first day it is introduced. This can be through ignorance, oversight, or willful disregard. Ignorance is fundamentally a communication and training issue, willful disregard is arguably a disciplinary matter, but probably the biggest barrier to the successful application of systems in the SHE area is oversight. Oversight, or the inability to anticipate adverse consequences, is one of the most common causes of harm to people and their surroundings. So often it is done with the best of intentions. No one intentionally crashes his or her car into a brick wall. It may happen because of a desire to get home on time. That is a creditable enough intention, but all too often the best intention ends in tragedy because people don’t think about the consequences

of driving around a corner too fast and ignoring the driving safety control systems of speed limits, tire condition, or allowance for adverse weather.

Systems exist in all walks of life and there is ample evidence that they deteriorate with time unless they are properly managed and controlled. The people who are to operate the system need to know what is expected of them. The requirement should be written down in a clear and concise manner and then this should be effectively communicated to the individuals concerned through training. The system should appear to be sensible and logical to the people involved. If a system appears to be illogical, then there will be a natural tendency for people to devise an alternative system that they consider to be more appropriate. Ideally, the system should be developed by one or more of the people who will have to operate it and certainly not by some remote bureaucrat who never leaves the sheltered cloisters of his or her own office. When people have been trained in the system, their knowledge of the requirement should then be checked to ensure a thorough understanding, before they are asked to apply it. Records should be maintained to confirm that users have been trained in the system and to identify when refresher training will be required. Even then, with a sensible logical system and trained operatives, the survival of the system is not assured unless it is properly managed. Most systems fail quite quickly, usually within six to nine months; unless people are reminded of the need (i.e., an accident happens and reinforces the need for a safety system) or management ensures compliance with the system through some process of checking or auditing.

Regrettably, the effort required by management to ensure compliance to SHE management systems is not always seen as a top priority when more pressing problems arise. Often it is only after some accident or injury occurs that the investigating team goes back to the safety instructions and finds to its relief that the injured party had transgressed some detailed subclause in the dusty document. Management feels vindicated and the poor wretch is given a summary dressing down to add to his or her physical ailments. Perhaps if a little more thought were given, the management team might recognize that it had also failed in its task of ensuring compliance with the safety procedure. Managers are well advised to remember that they have a duty of care toward their employees and that the regulatory authorities are likely to want to know as part of their investigation exactly what steps management took to ensure compliance with both regulatory and its own internal safety procedures. The mere existence of a written procedure does not confirm that there was necessarily an effective system in place. In fact, the existence of an injury almost immediately suggests that management has failed in its "duty of care." It is now well understood by experienced incident investigators that the immediate causes of an incident are rarely the real underlying cause of the incident. Frequently the immediate causes relate to the period in the few minutes prior to the incident. The underlying causes go back much farther in time and often have roots in management's lack of control over a prolonged period and the failure to have robust SHE systems in place.

The consequences of failures in safety are often all too immediate because often someone gets hurt, but system failures in protecting employees' health from exposure to asbestos dust, may not be realized for forty years and failures in environmental controls to prevent land contamination may not result in observable consequences for even longer. Compliance with such environmental and occupational

health protection systems is particularly difficult as responsible parties may consider that the risk of the consequences coming back to haunt them within their career span is so small as to be worth taking a chance.

Leaders in the field of industrial loss prevention all advocate for the same three elements of a safe and healthy working environment. These I shall refer to as the three “Ps” and are “People,” “Procedures,” and “Plant.” Taking these in reverse order, let us consider “Plant” first. Plant or operating equipment needs to be of adequate standard in order to achieve a good safety and health record for the workforce and its neighbors. Work equipment should be properly designed to be safe to use and should have been subject to an appropriate form of risk assessment. Often plant and equipment has the potential to deteriorate with age and so the standards of maintenance and upkeep are critical. “Procedures” should be established to ensure that potentially hazardous equipment remains safe to use and in a condition that will not cause harm to the environment. These critical elements of plant and equipment maintenance are known as SHE assurance and are an important part of corporate governance. However perfectly designed and maintained plant and equipment may be, it cannot alone ensure that no harm occurs. Equipment is used and operated by people and people are notoriously unreliable. The use of equipment should be controlled by the second of the three Ps: “Procedures.” In the late 1980s when the International Quality Standard series ISO9000 was first being implemented on a large scale, many companies made the mistake of believing that everything could be controlled by procedures and instructions. Every eventuality was considered and the tropical rainforests disappeared overnight in a mountain of procedural bibles. The only problem was that the sheer volume of procedures was unmanageable and they were rarely used and never revised. It is now recognized that you cannot “proceduralize” every aspect of life and that the procedures should relate to the important and generic activities. The application of good and well-maintained procedures allows a step change improvement in SHE performance, compared with relying only on a well-designed and well-maintained plant.

To achieve world-class performance in SHE management, we require the involvement not just of engineers, designers, and managers, but also the proactive involvement of all employees. Employees must become responsible for not just their own safety, but also for that of their work mates; they should in effect become “their brother’s keeper.” Experience in hazard recognition training demonstrates to me that people will identify more hazards when pooling their ideas and working as a team, than any one individual will do when working alone. Consequently, to have an effective loss prevention system requires attention to the plant, the procedures, and the people.

The scope of a loss prevention audit may cover any combination of safety and occupational health and environmental protection. It is logical to attempt to combine these three issues as they all relate to harm to individuals, groups of individuals, or the environment. They are all issues of “loss prevention.” Safety harm usually arises as a result of acute effects and is often short term and reversible (except in the case of fatalities), whereas occupational illness usually relates to long-term exposure and results in chronic effects. However, the underlying causes for both sets of consequences can be the same. Audits often need to pay particular attention to health

hazards or environmental effects because the consequences are not immediate and therefore may be less obvious to the worker. Unfortunately, because of the size of the task, the danger of attempting to cover all aspects of health, safety, and environmental control within a single audit is that the audit either becomes unwieldy or at the other extreme may become superficial in its individual elements. This problem of superficiality is the greatest practical problem facing the health and safety auditor today. Superficiality not only discredits the outcome of an individual audit but may bestow a feeling of inappropriate “comfort” when this may not be fully justified.

2 Management Systems

According to new estimates by the International Labor Office (ILO), the number of job-related accidents and illnesses annually claims more than two million lives worldwide, and this number appears to be rising because of rapid industrialization in some developing countries. The assessment also indicates that the risk of occupational illness has become by far the most prevalent danger faced by people at work—accounting for 1.7 million annual work-related deaths and outpacing fatal accidents by nearly four to one.

The ILO found that in addition to work-related deaths, each year there are some 268 million nonfatal workplace accidents in which the victims miss at least three days of work as well as 160 million new cases of work-related illness. Injuries, illnesses, and environmental incidents are costly not only to the world's economy, but also to workers, their families, and to our surroundings.

In many countries, company directors, managers, and employees can now be held personally liable for failure to control health and safety. Increasingly, managers are held criminally liable when things go wrong and so there is an increasing tendency for organizations to document their safety systems. Of course, a mere written procedure does nothing in itself to reduce the risk of harm to employees—it is merely a statement of intent. To translate such a statement into meaningful action requires some sort of management activity. To ensure that this action is properly sustained requires monitoring by the management team. The level of informality or formality of the system will depend on the nature of the enterprise and the risks associated with it. The essential starting point is to consider SHE management as a key business process. The board or senior management of the organization should set down its basic requirements in the areas of SHE protection in the form of a policy statement, which should be made available to all employees. The policy should state the organization's position on SHE matters and how all the employees will be expected to comply with them. It should also state the arrangements and responsibilities within the organization for implementation of that policy. The policy should influence all the organization's activities, including the selection of people, equipment, and materials, the way work is done, and how goods are designed and services are provided.

In summary, the policy should:

- Be a clear written statement of the organization's position relating to loss control in safety, health, and the environment
- Identify who is responsible for SHE performance
- Identify the sources of expert SHE knowledge
- Be signed by the most senior person(s) in the organization
- Be prominently displayed in an up-to-date form
- Be communicated in clear and concise terms to everyone within the organization

The existence of an up-to-date policy statement is a clear indication that the management team considers SHE loss prevention to be a key issue for the organization. However, as stated previously, the existence of such a statement does not avoid accidents happening. To make the policy effective, it is necessary to get the employees involved and committed. Creating positive loss prevention behavior among the staff needs to be properly managed. First, people need to know how they are expected to behave in the organization, what tasks they are required to do, and how, where, and when they should do them. It is the responsibility of management to set the standards of behavior that are required, with a view to controlling the risks to employees, customers, neighbors, and the environment. Many industry standards already exist and in some cases it is appropriate to adopt these. In other cases it will be necessary for the organization to develop its own standards. Either way, the standards should identify the basic management requirements for loss prevention but they must be documented, measurable, achievable, and realistic if they are to be effectively adopted.

Organizations wishing to develop their own standards should consider these areas of their operations for application of those standards:

- Premises and workplace
- Assets design and procurement
- Substance control and material hazards
- Transport and distribution
- Storage and warehousing
- Task design and risk assessment (safe systems of work)
- Training requirements
- Continuous improvement plans
- Product safety
- Regulatory compliance
- Change control
- Construction
- Maintenance
- Environmental control
- Health assessments
- Emergency and crisis management
- Contractor management
- Effluent and wastes
- Office and laboratory safety
- Energy and water conservation
- Spillage prevention and control
- Atmospheric emission abatement

Frequently, standards will be stated in a general “high level” way which is either not “user friendly” or which covers a wider scope than particular employees may require. Very often, standards will state “what” has to be done, but not necessarily “how” it should be achieved or “who” is responsible for doing it. In these circumstances it may be necessary to develop further guidance for the employees. Guidance usually takes the form of a record of best practice. Good examples of the provision of guidance are in