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Integrated Management Systems (IMS) – Potential Safety Benefits Achievable from Integrated Management of Safety, Health, Environment and Quality (SHE&Q)

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Environment Directorate
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Other OECD publications related to Chemical Accident Prevention, Preparedness and Response:

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Health Aspects of Chemical Accidents: *Guidance on Chemical Accident Awareness, Preparedness and Response for Health Professionals and Emergency Responders* (1994) [prepared as a joint publication with IPCS, UNEP-IE and WHO-ECEH]

Guidance Concerning Health Aspects of Chemical Accidents. *For Use in the Establishment of Programmes and Policies Related to Prevention of, Preparedness for, and Response to Accidents Involving Hazardous Substances* (1996)

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Internet Publication, Report of CCPS/OECD Conference and Workshop on Chemical Accidents Investigations (2002)

Special Publication, International Directory of Emergency Response Centres for Chemical Accidents (2002, revision of 1st edition published in 1992)

No. 10, Guiding Principles for Chemical Accident Prevention, Preparedness and Response *– Guidance for Industry (including Management and Labour), Public Authorities, Communities and other Stakeholders* (2003, revision of 1st edition published in 1992)

No. 11, Guidance on Safety Performance Indicators *– A Companion to the OECD Guiding Principles for Chemical Accident Prevention, Preparedness and Response – Guidance for Industry, Public Authorities and Communities for developing SPI Programmes related to Chemical Accident Prevention, Preparedness and Response* (2003, interim publication scheduled to be tested in 2003-2004 and revised in 2005)

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The Environment, Health and Safety Division publishes free-of-charge documents in nine different series: **Testing and Assessment**; **Good Laboratory Practice and Compliance Monitoring**; **Pesticides and Biocides**; **Risk Management**; **Harmonisation of Regulatory Oversight in Biotechnology**; **Safety of Novel Foods and Feeds; Chemical Accidents; Pollutant Release and Transfer Registers; and Emission Scenario Documents.** More information about the Environment, Health and Safety Programme and EHS publications is available on the OECD's World Wide Web site (http://www.oecd.org/ehs/).

This publication was produced within the framework of the Inter-Organisation Programme for the Sound Management of Chemicals (IOMC).

The Inter-Organisation Programme for the Sound Management of Chemicals (IOMC) was established in 1995 following recommendations made by the 1992 UN Conference on Environment and Development to strengthen co-operation and increase international co-ordination in the field of chemical safety. The participating organisations are FAO, ILO, OECD, UNEP, UNIDO, UNITAR and WHO. The World Bank and UNDP are observers. The purpose of the IOMC is to promote co-ordination of the policies and activities pursued by the Participating Organisations, jointly or separately, to achieve the sound management of chemicals in relation to human health and the environment.

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FOREWORD

This report presents the main generic management system standards (i.e. those MS standards used internationally and across business sectors) with special reference to the chemical industry. It also addresses the potential benefits achievable from integrated management of safety, health, environment and quality (SHE&Q). The report has been prepared by a consultant, Mr. *Ian M. Waldram*, Director of the SHEQuality Ltd., Scotland, United Kingdom.

The report comes within the framework of the current project on development of guidance for the implementation of integrated management of SHE&Q, in the OECD Programme on Chemical Accidents.

This report was originally prepared for OECD in mid-2004 and most of the text reflects the status of Integrated Management Systems (IMS) at that time. However minor revisions have been incorporated to take account of key publications and other global developments up to mid-2005, when the document was formally approved as an OECD publication.

The report builds from existing documents on Occupational Safety & Health Management Systems (OSHMS) and Integrated Management Systems, and adds evidence from focussed interviews with a number of experienced management system stakeholders. Whilst much of the information is generic, application to the chemical industry is a particular focus, as the work was commissioned by the OECD Working Group on Chemical Accidents.

The common elements of all MS models are summarised, and some differences between Quality, Environment and Safety & Health MS are highlighted. The history of the most commonly used MS standards in these three areas is outlined, together with some IMS and Business Risk Management standards. The report then considers a number of practical issues in MS implementation, and illustrates the relevance of these with examples from the interviews.

It is concluded that, whilst appropriate implementation of suitable MS standards can result in continual improvement of OSH results, there are also examples where MS implementation has minimal effect. In particular, if IMS are used in the absence of competent OSH advisors and auditors, OSH results are likely to be variable, even though there is excellent management commitment and employee involvement, as required by the OSHMS standards.

Ten good MS practices are then identified, based on the interviews and other evidence, implementation of which will aid continual improvement of results and ensure MS are efficient in use of resources. One such practice is for chemical sector organisations to use the Responsible Care MS, a sector-specific global standard which incorporates most of the other identified good practices.

The OECD Working Group on Chemical Accidents recommended that this report be forwarded to the Joint Meeting of the Chemical Committee and Working Party on Chemicals, Pesticides and Biotechnology, for consideration as an OECD publication. The Joint Meeting agreed that it should be made available to the public.

This document is published on the responsibility of the Joint Meeting of the Chemicals Group and Management Committee of the Special Programme on the Control of Chemicals of the OECD.

1. INTRODUCTION

The OECD Working Group on Chemical Accidents has held Workshops and issued previous reports about aspects of Occupational Safety & Health Management Systems (OSHMS) – see for example refs. 1, 2 and 3. In particular ref. 3 is a very thorough survey of issues to do with practical implementation of OSH-MS in organisations, and the advantages and disadvantages of integration.

This report builds from such references, and does not attempt to repeat them. In particular this report utilises additional material, both publications and also data collected from focussed interviews with a range of organisations accessible to the author – some in the chemical industry, some in other sectors.

1.1 Q, S, H & E Management System similarities

There is no doubt that, in theory, most formal Management Systems (MS) are highly compatible – all are derived from Deming's original "Plan-Do-Check-Act" cycle for continuous improvement. Most systems use a visual 'model' as one means to communicate their contents and, even when these models look quite different, they can all be shown to be compatible with Deming's simple 4-stage cycle (see for example ref. 4, sections 1 and 2).

At a more detailed level, there are tables which 'map' the contents of one standard or guidance against the others, thereby identifying synergies and similarities. In particular, for the chemical industry, the Responsible Care Guidance includes a 'road map' showing how it relates to EMAS/ISO 14001; OHAS 18001 and ISO 9001 (ref. 5, Appendix 2) and also how it relates to the EFQM Business Excellence Model (ref. 6).

The wide range of relevant standards and guidance is covered in more detail in section 2.

1.2 Q, S, H, E Management System differences

However there are also important differences between the various Q, S, H & E standards and the issues they cover. Firstly, although all are about identifying risks and ensuring appropriate controls are in place, the main 'beneficiaries' if the MS is effective are very different.

- For Safety and for Health the 'prime beneficiaries' are workers in the business, with neighbours and product users as possible 'secondary beneficiaries' – these people can readily speak for themselves if given an opportunity, and an effective OSH-MS needs to allow for this;
- For Environment the 'prime beneficiaries' are mostly non-human - plants and animals impacted by contaminated ground, water, air, or noise, radiation, etc. though there can be direct effects from these on human populations too. The 'spokesmen' for Environmental concerns tend to be NGO pressure groups, and also local regulators – if adequately resourced;
- For Quality the 'prime beneficiaries' are customers – for some types of product or service they have strong links with and influence over the supplier, in other areas their views may be difficult to feed back.

It is vital that all MS are 'owned' by line managers, but they also need expert advisors – both to help identify accurately the hazards which give rise to risks which the MS is then designed to manage, and also to inform the organisation on current good practices (or 'controls') which should be implemented to ensure the resulting risks are acceptably low. This is a second important area of potential difference

between MS. Depending on the size and type of work within an organisation and the range of products/services it provides, identifying hazards and suitable controls in the four separate disciplines of S, H, E and Q may be quite simple, or extremely complex. The need to ensure availability of competent advice on the full range of hazards and controls is further discussed in section 3.1.

This issue of line management ownership whilst also using expert advisors can lead to a third area of difference. Whilst it would be almost universal for quality advisors and environmental advisors to report to the main business line management, safety and health may be viewed as 'people' issues and thus report via Human Resources (HR). Unless reporting lines of all the discipline specialists who advise about details of the respective MS are similar, it is unlikely that much integration can occur – the same issue is evident when organisations begin to manage and report their Corporate Social Responsibility (CSR) results, and there are strong parallels between CSR and IMS.

A fourth area of difference relates to legislation. Most jurisdictions, though not all, have detailed local laws and guidance related to Safety, Health and Environment which set minimum standards - but nothing similar for Quality. This can present problems both when a single organisation operates in different legislative regimes (these may be within a single federal nation as in Canada, USA or Australia, or across national boundaries). Even where legislation is framed so as to set uniform standards, e.g. in EU, it is often interpreted or enforced differently at different locations. The fact that S, H and E standards are set at least partially by legislation and enforced by regulatory bodies adds a dimension to SHE-MS compared with QMS which can make full integration difficult.

2. MANAGEMENT SYSTEMS (MS) STANDARDS

A huge number of documents could potentially be listed as 'MS Standards'. This section covers only the main generic standards (i.e. those used internationally, and across business sectors), but with special reference to the chemical industry. Relevant data is included about their origin, content, planned revisions, etc.

The style of documents varies considerably. Some are specifically written as Standards, in a format which readily permits assessment against their provisions. Others are titled Guidance, but have a very similar format. Yet others are more narrative in style – in some cases there are linked documents designed to allow easier assessment against the main standard, in some cases there are no supporting documents and assessment is more subjective. In this report, they are all referred to as 'standards' whether or not that word appears in the title.

2.1 QMS Standards

ISO 9001

The ISO 9000 family of international quality management standards and guidelines (ref. 7) has earned a global reputation as the basis for establishing quality management systems. The 2000 edition marked an important change to a 'process approach' compared to the 'procedural approach' described in the 1994 versions, and organisations certified to the previous standard were allowed a 2-year transition phase.

A criticism of earlier ISO 9000 editions was that excessive documentation was created which added little value but was required by assessors before award of a certificate. Another criticism was that ISO 9001 scope is limited to the 'products' of an organisation, i.e. does not cover 'non-product' processes

and results, for example those relating to people or to waste. Again this is not so for the 2000 version, though many businesses which seek certification choose to limit the scope to product issues (see section 3.5).

The 2000 revision is quite major – 20 elements in the 1994 edition have been reduced to 5 main chapters. Also there are now 2 main standards: ISO 9001: Quality management systems – Requirements; ISO 9004: Quality management systems – Guidance for performance improvement. The revised ISO 9001 addresses the quality management system requirements for an organization, to demonstrate capability to meet customer requirements and enhance customer satisfaction. The revised ISO 9004 is intended to lead beyond ISO 9001 towards a Total Quality Management (TQM) approach, based on meeting the expectations of all interested parties. The ISO website also emphasises that ISO 9001 can be used to improve business processes without the need for external assessment and certification – but in practice this approach seems rare.

EFQM – Excellence model

The European Foundation for Quality Management first issued their Excellence Model in 1992. The current version is dated 2003, there is an ongoing review process targeted at the next edition for 2006. Details of the model, research underpinning its structure and supporting documents are available on the EFQM website (ref. 8) – the eight foundation principles have now been adopted into the ISO 9000:2000 series (with minor rewording), but are arguably better embedded in EFQM-based processes than in many ISO 9000-certified organisations.

The EFQM framework looks rather different from other MS models, with 5 criteria titled 'enablers' and 4 'results'. It is designed as a generic non-prescriptive framework to encourage continuous improvement via self-assessment, rather than achievement of a threshold 'standard' judged by an external certifier. There is a well-defined 'path to excellence' with 5 different award levels based on detailed scored audits carried out by a trained team – the lower two levels are self-assessed, the top three require external assessment of a portfolio of written evidence (increasingly detailed at each level) plus an external on-site audit/assessment team.

Fundamental to the EFQM model is the concept of an organisation managed by linked 'business processes' which use a range of inputs to deliver desired outputs.

2.2 EMS Standards

ISO 14001

In practical terms there are no other competing global standards. There was a separate European EMAS (Eco-Management and Audit Scheme) standard, which some users believed had a better emphasis on continual improvement of results, but EMAS MS standards are now based on ISO 14001, though EMAS also requires public reporting in addition to robust internal processes.

Like ISO 9001, there are in fact a range of ISO 14001 standards and supporting documents (ref. 9). A new edition of ISO 14001 was published in November 2004. Details of the changes basically parallel those in ISO 9001: 2000.

2.3 S&HMS (or OSHMS – Occupational Safety & Health MS) Standards

This is the area of greatest MS diversity though, as noted in section 1.1, the similarities between systems are much greater than their differences. Although "health & safety" are almost always treated together, most national and international workplace legislation and standards in fact concentrate much

more on safety hazards (= prevention of injury) than on health hazards (= prevention of illness). However there is growing evidence, as living standards and life-expectancy improve, that the true personal, social and financial costs of work-related illnesses are in fact much more significant than the costs of injuries – though harder to identify and quantify, because the causes of ill-health are rarely unique to the workplace and the effects may not be seen for many years.

HSG65

This is the publication reference of guidance on 'Successful health and safety management' originally issued by Health and Safety Executive (HSE), UK in 1991, and revised in 1997 (ref. 10). The purpose of HSG65 is to demonstrate that H&S can and should be managed with the same degree of expertise and to the same standards as other core business activities, so as to effectively control risks and prevent harm to people. In 1991 this was a relatively novel message, though today it is widely accepted in many regulatory regimes. The 2nd edition of HSG65 was a significant update, and there is now some pressure within HSE for a further revision, but no firm plans to do so (ref. 11)

HSG65 is based on a high-level 6-element continuous improvement MS and contains a wealth of generic practical guidance. However it is (probably deliberately) not structured to be readily transformed into an assessed standard, and HSE have published no linked documents comparable to those issued by ISO in support of ISO 9001 and 14001. Thus, while many organisations, particularly those based in UK, claim to have based their internal OSHMS on HSG65, it is difficult to see how this can readily be verified.

BS 8800

A new and revised edition of this UK standard was published during compilation of this report (ref. 12), replacing the original 1996 version and taking account of changes in recognised national and international good practices. The main text has been simplified, but is supported by Annexes which provide detailed practical OSHMS implementation guidance. The Annexes, some of which are new and some revised, cover activities such as risk assessment and control, accident investigation, measurement of performance and audit, demonstrating the links from these essential activities into a comprehensive OSHMS. In addition, the first Annex compares and contrasts the various recognised MS (ISO 9001, ISO 14001, ILO OSH-MS 2001 and OHSAS 18001) in more detail than provided in this report.

There are many close linkages between BS 8800 and HSG65 and in combination they represent a rich source of guidance about good OSHMS practices, both high-level and operational. As with HSG65, BS 8800 is not an OSHMS specification against which existing management systems can be assessed and certified.

OHSAS 18001 and National Standards

During drafting of the original BS 8800 a major division of opinion arose as to whether or not independent assessment and certification of an organisation's OSHMS should be encouraged, as for QMS and EMS. Some viewed such certificates as valuable, particularly in the context of effective supply chain management, others believed that existing certification processes: added minimal value, required excessive resources and resulted in unused manuals – so new certification processes should be resisted. It proved impossible to reconcile these views within BS8800, which was structured and published as a non-certifiable standard.

As a result, an international consortium of certification bodies, including the commercial arm of BSI, produced the OHSAS 18001 specification in 1999 (ref. 13), followed by implementation guidelines OHSAS 18002 in 2000 (ref. 14). Neither document is an official British Standard, but OHSAS 18001 either is, or is likely to become, a national standard in other countries, notably in Pacific Rim. A recent

survey by BSI (ref. 15) identified that over 8000 OSHMS certificates have been issued in 70 countries, to many different standards and guidance, and that some 46% are to OHSAS 18001.

With the revision of BS 8800, from which it is derived, it might be presumed that OHSAS would be updated automatically. A review is indeed planned, but the decision on when to publish a revision will take into account other factors (ref. 15), including the needs of current new users to have time to 'bed down' their internal processes before revising them to meet an improved standard. When a revision is agreed, it is likely to include some alignment with other high-quality national standards such as AUS/NZ 4801 (ref. 16), to aid recognition as a truly global standard.

A new US standard was published in 2005: ANSI/AIHA Z10 – Occupational Health and Safety Systems (ref. 35). The format includes both a standard and associated guidance, but is not intended as a basis for certification. It is fully compatible with ISO 9001/14001 and takes account of the other national/global OSHMS documents outlined in this section.

ILO OSHMS Guidelines

In late 1990's there was a campaign to get OHSAS 18001 accepted as an ISO standard, to complement ISO 9001 and 14001. After much lobbying, it was eventually agreed that, because the 'primary risk targets' for OSH hazards are the workforce (see section 1.2), it is important that any such global standard should emanate from a body with wider representation than ISO. Accordingly ILO, which includes representation from Labour Inspectors, Employers and Employees, took over the work on a global standard, and issued Guidelines in 2001 (ref. 17).

The Guidelines provide a sound basis for an OSHMS, with a stronger emphasis on workforce involvement and consultation than some others. They include a simple model showing how they can be customised ('tailored') as a national, sectoral, or corporate standard, but the author is not aware of this having happened to any significant extent.

There are no ILO supporting documents to aid Certification to the Guidelines, and to date there seems to be no market for such Certification.

2.4 Integrated MS (IMS) Standards

Because so many of the elements of these different MS are common or very similar, efficiency considerations drive many organisations to try to merge them. Most common is a combined EHS-MS, but some advocate a fully integrated QuEnSH-MS. BSI has published a framework for managing the operational risks any organisation faces in its day-to-day business (ref. 30). The aim is to provide a structure by which an organisation can efficiently and effectively manage its operations through one system. A further BSI publication (ref. 31) gives an approach for integrating the management of quality, occupational safety and health and environmental aspects within one MS. This 'how to do it' manual includes flowcharts, questionnaires and examples, and takes readers through the model outlined in ref. 30.

The likely advantages and disadvantages of such approaches are considered in sections 3.6 and 3.7. In this section some of the publicly available integrated systems are summarised.

Combined Certification

One method is to request that the assessing body issues a combined certificate, typically to ISO 14001 and OHSAS 18001, less often including ISO 9001 as well. This approach may be marketed as a possible way to reduce assessment costs, and that issue is also considered in section 3.6.

Global sectoral standards

Sectors where many organisations operate internationally in a range of regulatory regimes (e.g. upstream oil and gas, ref. 18) or where there are pressures for global consistency in the absence of detailed regulations (e.g. shipping, ref. 19; food sector, ref. 25; US pharmaceutical sector – all suppliers must submit to Food and Drug Administration (FDA) audits) have developed their own standards. Over time, these may become mandatory, via either governmental or supply chain pressures. This is the case for international shipping, via the International Maritime Organisation.

Responsible Care (RCMS)

This standard is specifically designed for the chemical industry. It fully integrates EMS and OSHMS, and includes much of the scope of a QMS. Responsible Care originated in North America and currently operates in 47 countries. All national RC models have the same 8 fundamental features, but are then customised to meet the needs of local stakeholder groups. An international review of RC has been undertaken recently, and it is likely that greater international harmonisation will follow in a near future.

The current UK RCMS (ref. 5) and the associated self-assessment guidance (ref. 20) include all the constituents of both ISO 14001/EMAS and the various OSHMS outlined in section 2.3. Compliance with this national voluntary sector standard requires, as a minimum: an internal MS compatible with the published model; annual reporting to the RC standard; a self-assessment to the standard at least every 3 years. It is not compulsory for a UK chemical manufacturer to belong to Chemical Industries Association (CIA), but most do – so RCMS implementation, self-assessment and reporting is in effect mandatory for most UK chemical manufacturers. (However, this does not cover chemical distributors, or non-chemical sectors with often very similar hazards - e.g. storage of significant quantities of hazardous materials). Similarly, in 2003 the US RC standard changed from one based on six linked Codes of Practice to an integrated RCMS, with mandatory independent certification. Full implementation of this change is required from all American Chemical Council member companies by end-2007.

For the UK RCMS, there is a good range of supporting guidance, and the main documents (ref. 5, 6, 20) are available as a single publication. They include a wealth of practical guidance, flowcharts and checklists, specifically targeted at the chemical industry. There are also 21 UK regional self-help 'cells', most of which meet quarterly and encourage RC users share experiences and good practices.

RCMS operates with two key underlying principles – working to standards that are 'more than compliance', and ensuring continual improvement of measured Q, E, S & H results. Whilst the basic UK implementation model is for self-assessment, independent certification is also available – currently 5 UK sites out of some 200-300 are certified, with another 30 due for certification in 2004. The RCMS self-assessment guidance (ref. 6) identifies 5 broad performance levels. External certification gives assurance that full compliance with level 3 is achieved, but self-assessment and continual improvement are the only means to achieve the higher levels 4 and 5.

2.5 Business Risk Management (BRM) Standards

With the growing emphasis on holistic management of business risks, and assurance in public reporting that such risk management is effective, certification to further MS standards is a trend. In most cases there is no attempt to integrate the standards, rather the structure and methodology of each MS is similar and the Certification is 'additive'. Such individual standards include:

Investors in People

This UK-originated scheme aims to maximise contributions to organisation from all employees (ref. 21). It is widely used in both public and private sectors, in all sizes of organisation, and delivered at a regional level. Internal advisors and external assessors require mandatory training, and certificates are awarded by independent panels based on assessor's reports.

Current evidence is that, once the required standard is achieved, few organisations have an ongoing continual improvement process, but instead rely mainly on the 3-yearly review visits to stimulate any improvements. IIP recognises this deficiency and has added 3 additional 'tools' to stimulate further improvements in specific areas, and also a 4-level 'Profile' tool which aims to drive continual improvement via both self-assessment and benchmarking data – IIP certificates are based on assessment of Level 1 performance (ref. 21).

There is strong emphasis in IIP on effective communications with employees, including with representative groups where appropriate, and also on development of employee capabilities, including provision of appropriate training. However this is all expressed generically, with no specific mention of OSH in the standard. Thus IIP is fully compatible with any OSHMS, but unlikely on its own to result in improved OSH results.

Information Security MS – ISO 17799/BS 7799-2:2002

Loss of security, particularly in IT systems, is a growing concern for many businesses. Risks from security breaches can be a significant factor in business continuity planning, and certification to this standard is an option being actively marketed by Certification bodies. Using a Business Risk Management approach, but with separate certificates for each major risk area, is further discussed in section 3.6.

BRM Standards

To date, there are few published standards in this area, though much activity. For example the latest draft UK regulations on 'materiality' (i.e what Company Law requires to be included in annual reports to investors) include reference to possible OSH risks for the first time (ref. 22). However it may be some time before this begins to alter BRM practices.

Of the current published standards, AS/NZS 4360 (ref. 23) is generic, clear, comprehensive and includes helpful examples and tools as Appendices. OSH and E risks are among those listed in ref. 23, Appendix D. In contrast, the widely available UK document (ref. 24) is more a management guide to BRM principles, with no tools or specific reference to OSH risks.

3. PRACTICAL ISSUES IN MS IMPLEMENTATION

The primary reason for attempting to manage anything systematically, as distinct from unsystematically, is a belief that the business results of a systematic approach will be better. In particular, using the Plan-Do-Check-Act model for systematic management implies an expectation that results will continually improve. It is important to note that these results are of two types:

Output measures: These are the 'products' of work processes – in the case of health and safety, output measures include: injuries and illnesses, and also their severity – deaths, time lost, permanent/ temporary disabilities, etc; also damage/loss – fires, spills/releases, equipment damage, etc. It is worth noting that these measures are all of 'health and safety system' failures. Because MS are successful most of the time, it is common to measure their results in terms of failure, rather than success – for example typical QMS output measures are: numbers or rates of defects; customer complaints; etc. and EMS output measures are: tonnes discharged to air, water, landfill; numbers of spills/releases, etc. All these output measures are used to monitor improvements in system effectiveness (or reductions in ineffectiveness), i.e. "is the MS successful in producing the desired results?"

Input (or system) measures: These measurements are generated within work processes, particularly by monitoring the resources needed to operate the processes – and are a measure of system efficiency, i.e. "is the effort/resource required sustainable, and in balance with the results and improvements obtained?" Note that continual improvement of system efficiency should be just as important a goal as continual improvement of system effectiveness – and efficiency criteria become more important as effectiveness nears the limit of 'flawless operations'.

The following 8 sub-sections address practical issues linked to MS implementation, considering how each may support, or impede, the goal of continual improvement of both effectiveness and efficiency, and also how an integrated (IMS) approach may affect the issue. Included in these sections are anonymised examples from interviews conducted as part of the research for this report.

3.1 Advisor and auditor competences

The many similarities between Q-, E- and OSHMS, but also some important differences, are reviewed in Section 1. As noted there, accurately identifying hazards and implementing effective, efficient controls requires involvement of competent advisors in the relevant 'discipline'. The range and depth of advice needed can vary greatly, depending on the specific business and activities of the organisation - the chemical sector typically requires understanding of a broad range of hazards, each with a fairly complex hierarchy of controls. The advisor(s) used, who may be directly employed or contracted part-time, will need both knowledge (qualifications) and practical experience, and should be able to demonstrate how their resulting competences are kept current via personal Continuing Professional Development (CPD) records in addition to relevant original qualifications. As a consequence of the range of technology in use, the detail of local legislation and published guidance on good practices, it is often very difficult to find a single person capable of advising across the whole range of hazards and controls – certainly this would typically be the case for chemical manufacturing sites.

Some organisations do set up an integrated internal group to advise on quality, environment and health & safety standards and practices, but within that group have individual 'practitioners' (or external consultants) specialising in each discipline. Other organisations keep one or more of these areas separate, recognising that similar MS processes are needed, but also that cross-discipline competence is hard to achieve, except at the most basic level.

A global chemical company, based in Switzerland, uses global 'business processes' to manage production and sales operations, and audits these to ISO 9001:2000. The UK production site currently has an American EHS Manager, with wide MS experience but no formal qualifications in Q, E or H&S. There are also local Environmental and Health & Safety advisors, with appropriate UK qualifications and competences, supporting this generalist manager.
The site has separate internal ISO 9001 and Responsible Care audits and continual improvement plans, and the company uses an external certification body for ISO 9001 verification, but an internal global EHS audit process. The site has won repeated UK awards for health & safety excellence.

The same issue of cross-discipline competence applies to auditors. (Note: auditors may also be referred to as 'assessors', especially when they assess the evidence they collect against a certifiable standard). If one person is expected to cover quality, environment and health & safety management in a single audit, it is most unlikely any of the systems will be assessed or verified in much detail. Therefore the goal of continual improvement can easily be lost, and audits become a 'tick-box' check that processes are in place – rather than verification that these processes are effective and efficient.

UK RCMS auditors are individually approved by CIA, after an assessed training course. Pre-course requirements are chemical industry experience, plus accredited auditor competence to ISO 14001/ EMAS. The short RCMS auditor course then covers the 'more than compliance' and continual improvement ethos of RCMS. The breadth of technical awareness required by auditors is acknowledged, and RCMS external auditors almost always work in 'mixed-discipline' teams to ensure in-depth awareness of the full RCMS scope.

Auditors also require auditing competences, typically an auditing course involves 3-days training, but equally important are the personal qualities required for effective evidence-gathering, assessment and communication of audit findings. A summary of generic 'practitioner competencies' is given on the IIP website (ref. 21, note that IIP expect the same competences in both advisors and auditors) and reproduced as Annex 1 because such personal qualities are often not considered when selecting an auditor. Having received basic training, a new auditor needs to develop experience by participating in audits led by more experienced auditors.

An organisation with internal systems based on the EFQM model requested bids for Certification to ISO 9001. During bid evaluation they required to meet the proposed auditors, and awarded the contract to an organisation with limited experience in their business sector, but with an auditor clearly committed to continual improvement. When they later required Certification to ISO 14001, they rejected a bid from their current Certifier, as the proposed Environment auditor was judged to have a 'tick-box' approach, in contrast to the Quality auditor. This organisation won a European Quality Award in 2003.

The ISO Auditing Practices Group hosts a website (ref. 26) with a wealth of guidance about generic auditing issues and good practices. Most of the content applies to all MS, not just ISO 9001. This is a particularly valuable reference tool for auditors working in locations with little opportunity for face-to-face peer review and discussion of auditing practices.

FDA auditors were mentioned in two interviews as usually being very confrontational, requiring excessive detail in paper evidence, and having little concern for efficiency of their MS requirements. Most FDA audits are reported as 'competitive', with the auditees seeking to give no information other than what is specifically requested, and the auditors trying to identify 'stones to turn over' so as to find hidden faults – this type of auditor/auditee relationship is not good practice.

3.2 Internal and External Auditors

A key element in all formal MS is auditing – by definition the auditor(s) must be independent of the organisation they are auditing, otherwise the process is defined as management monitoring, not audit. However, there are degrees of independence and in all but the smallest organisations it should be possible to implement a system using auditors who are employed within the organisation, but in a different part and with different routine reporting relationships from the area they are auditing – this is defined as '1st party' auditing, whereas external audits are '3rd party' (client audits of suppliers are '2nd party').

Both types of auditor have advantages and disadvantages. The following table is taken from ref. 4.

Internal auditors	
Advantages	**Disadvantages**
• Know the organisation and where to look for evidence	• External stakeholders may have suspicions about their independence
• Reports have high internal credibility	• Take resources away from normal work – for both training and planned audits
• Excellent developmental experience because employees learn in detail about other parts of the organisation	• Can have a limited vision of improvement opportunities due to lack of external benchmarks
• Aid transfer of good practices across the organisation because they identify opportunities for sharing	
External auditors	
Advantages	**Disadvantages**
• High credibility with external stakeholders	• Must 'earn' respect for their findings within the organisation – initially they are often viewed negatively
• Provide strong benchmarking knowledge and give access to external Certification where this adds value	• Do not know the organisation, so may request much pre-audit documentation and take longer to complete their work
	• Can be expensive

Where external MS Certification is desired, external auditors are often employed early on and it can then be difficult to create an effective 'continual improvement' culture which also uses internal audit findings as a source of ideas for improvement. As can be seen from the table above, if there is no internal audit process some opportunities are lost which are not available from purely external audits.

In the most robust and effective systems, both external and internal MS auditors are used, just as they are for financial auditing – this arrangement is considered further in section 3.4.

3.3 Accreditation of External MS Audit services

Accreditation bodies are established in many countries, often by government or with the encouragement of government, with the primary purpose of ensuring that certification/registration bodies in the country are subject to oversight by an authoritative body, based on standards issued by the International Accreditation Forum (IAF, ref. 27). Accreditation reduces risk for government, business and customers by ensuring, through regular surveillance, that certification bodies are both independent and competent. Many organisations providing certification to ISO 9001, ISO 14001 and OHSAS 18001, and

also to some of the combined standards, have been assessed by an accreditation body, and therefore provide 'Accredited Certification', i.e. the processes they use to select, train and appoint competent auditors and to issue certificates are externally assessed as meeting IAF standards.

However there is no absolute requirement to obtain such accreditation before issuing certificates which verify that an organisation meets ISO, or any other, Standards. The market for certification services is often highly competitive, and one way to cut costs is to avoid paying for accreditation. An alternative view is that the checks carried out for accreditation are too limited to guarantee that all those accredited are of acceptable quality, so market forces are a better guide. Many clients who require suppliers to demonstrate that they "meet ISO 9001 standard", or an equivalent, are reported to never ask questions about whether the certificate has been issued by an accredited body.

At a seminar in March 2004 in Scotland, attended by organisations involved with ISO 9001, etc. in a range of business sectors, 160 attendees voted as follows:

1. Following ISO 9001 is a complete waste of time, our money and efforts would be better utilised in other ways – 24%
2. QMS based on ISO 9001 is good for business, but it can be adequately maintained by the business alone – 44%
3. As for 2, but to be effective it needs to be monitored by a competent 3rd party – 17%
4. Accredited Certification to ISO 9001 provides clear benefits for any business – 15%

In theory the use of an accredited certification supplier should provide more assurance that the MS assessment is effective than using a non-accredited supplier. However the experienced attendees at this particular seminar were evenly split on whether accreditation actually adds value in practice.

As noted in section 3.2, by definition auditors need to be independent of the systems they audit. However, if an organisation decides it needs certification to a particular standard as a pre-requisite for doing business, it is common to engage an experienced consultant to advise about what needs to be in place, and often then to assist with design and implementation of the changes needed. If the same consultant is later asked to certify that the organisation now meets the standard, they are no longer independent. Accredited bodies must have processes in place to prevent such conflicts of interest. Non-accredited bodies may have no concerns about the issue.

Because of the need to maintain independence, accredited auditors/assessors are expected to give written advice about MS improvements needed, but not about how to do this. If audit personnel rotate, as is typically the case for self-assessments and occasionally for external audit bodies, 'how to do it' advice about improvement opportunities can legitimately form part of their audit report.

Auditors should be willing to use their practical experience to support continual improvement, but may have concerns about prejudicing their independence for future audits. The format of their questions will often identify practical improvement steps which they have observed elsewhere. Also they can be asked for examples of how the desired improvements could be made. Informal verbal advice does not generally contravene the independence standard, and if sought at the end of the audit can be a valuable by-product for the auditee.

3.4 Certification and Self-Assessment

All the MS outlined in section 2 are based on a 'continual improvement' model, but there are challenges when linking this to award of a certificate which confirms that a recognised standard is achieved. The standard itself may require continual improvement, but what does this mean in practice?

An initial Certificate is not awarded until the specified standard is achieved, based on audit evidence. Re-certification is then normally every 3 years, with additional 6-monthly or annual 'surveillance visits' to check that the MS continues to function correctly. If there is evidence of a deficiency against the standard, there are several stages of reporting non-compliance, as judged by the Certification body. Terminology varies, but they can be summarised as:

- Observation
- Improvement opportunity
- Non-conformance
- Unaddressed non-conformance
- Suspension
- Certificate withdrawal.

Continual improvement issues that may arise during surveillance or re-certification include:

- If improvement goals are set, but not achieved, is that a non-conformance? – if so that would guarantee that all goals were set to be achievable, whereas in practice the use of 'stretch targets' seems to result in better business performance;
- If there is a single large failure, for example fatal accident, major release, product recall, is that a non-conformance?
- If improvement goals are not set, should the certificate be withdrawn? – if so many organisations should reportedly have lost ISO 9001 certificates after the 2-year transition period for ISO9001: 2000 in which improvement is required, compared to the 1994 version where it is not. In practice non-conformance reports were issued, but few certificates were withdrawn;
- If the certificate is for more than one site, how low can standards be on one site before the overall certificate is withdrawn? Must all sites be assessed for every renewal?

In practice, withdrawal of a certificate is very much a 'last resort', as it represents failure by the Certifier to convince their client that an improvement is needed. Whilst the great majority of organisations with Certificates take appropriate actions in response to audit Observations, Improvement opportunities and Non-conformances, a small minority may have quite serious MS deficiencies. Thus, having a MS certificate is not a guarantee of continual improvement.

The UK Investors in People (IIP) certification scheme (see section 2.5) now includes add-on modules to encourage continuous improvement, with 3 'improvement levels' above IIP certification at level 1. However this approach is too new to allow evaluation of its benefits.

If obtaining certification is not an issue, there is widespread evidence that a self-assessment approach works well in driving improvements – after all there is not much point in operating an internal self-assessment process unless the organisation is reasonably good at using the results to make improvements. Examples of MS based on self-assessment include EFQM, Responsible Care, HSG65, BS 8800, ILO (see section 2 for details). In some cases external assessment can be added after self-assessment has led to recognised improvements (notably Responsible Care and EFQM). Note also the box in section 3.3. where, for the participants in one recent UK seminar, self-assessment was seen as more useful overall than both types of external assessment.

A UK gas terminal obtained ISO 9002 certification for supply of products. As the globally-mandated corporate internal 'flawless operations' integrated MS became fully effective, the ISO 9002 systems were seen to have no added value and, after 6 years, the certificate was discontinued.

3.5 MS and Certificate Scopes

As noted in section 1.2, the 'targets' at risk if Q-, E- and OSHMS are ineffective are significantly different. In particular employees, those most at risk from OSH hazards, are also involved in managing those hazards. This contrasts with those 'at risk' if Q- or EMS are ineffective, who have no direct role in the management systems.

An organisation with internal processes based on EFQM is also externally assessed and certified to ISO 9001, ISO 14001, IIP and 3 sector-specific schemes. The main improvement drivers come from EFQM internal monitoring/audits and external audits, not the other external assessments. Every year the business benefits of each additional externally-obtained certificate are reviewed, and renewal is sought only if there is clear continued benefit.

When organisations are certified to a MS standard, both the standard and the 'scope' are always detailed on the certificate. For ISO 14001 and OHSAS 18001 the scope is usually each operational site, i.e. all operations on that site, or occasionally the whole organisation for all its sites. In contrast, ISO 9001 certificates typically cover only the delivery of specific products or services. The organisation may have other uncertified products or services, also organisational activities which do not contribute directly to product/service quality are excluded from the assessment. QMS external assessments with a typical product/service scope will seek evidence about the training and competence of employees to operate the product/service delivery process, but not about operational health & safety standards, or environmental standards, unless these directly affect the product/service. Nor will such QMS assessments cover non-operational aspects, such as hazards and working conditions in maintenance areas, offices, transport, etc.

When questioning individuals about current ISO 9001 certification to obtain evidence for this report, on more than one occasion they had to check the certificate to remind themselves of the exact scope, which was sometimes not for their full range of products/services. They reported that this is a question not often asked – most people, including senior staff and clients, are content with 'we are ISO 9001 certified'.

Similarly, some of the more 'people-based' MS, such as EFQM and IIP, are strong in assessing systems that ensure employees are encouraged to develop and contribute to the maximum extent possible, but weaker or non-existent in assessing OSH risks which may reduce or limit people's work capacity and thus their contribution.

In contrast with quality, no one would expect the scope of an EMS or an OSHMS to be less than the whole organisation. Indeed there is often pressure from external stakeholders (regulators, NGOs, investors) for both types of MS to extend up and down the supply chain, as part of a wider approach to sustainability and Corporate Social Responsibility (CSR).

In 2004 a UK chemical pigment supplier was asked by a UK paper mill for details of its site OSH results, as part of a mandatory supply-chain questionnaire. The paper mill is a subsidiary of a Finnish parent company, where social governance is particularly well developed – most customers are concerned about OSH issues in product use, but not about those where it is manufactured.

Largely because of these 'MS scope' issues, it would be wrong to expect any QMS automatically to improve internal SHE standards and results. However when a product QMS system is effectively linked with an EMS and an OSHMS, as for example in Responsible Care, there can be valuable synergistic effects.

3.6 Multiple Certificates

This is the most common approach – an organisation is independently assessed to each standard and separate certificates are issued. Depending on the global location, business sector and market pressures, either ISO 9001 or ISO 14001 may come first – sometimes aided by national or regional government support. From interviews carried out for this report, only relatively rarely is the main driver for certification internal, i.e. seeking recognition that high standards have been achieved, resulting from an internal continual improvement vision. In many more cases the need for certification is from national or international supply chain pressures.

Having been certified to one standard, it can be a natural step to add others. Many organisations will seek to use the same external assessment and certification body, believing there is bound to be some cost-saving. Only rarely is the quality of the assessment service a major consideration, as outlined in the box in section 3.1. Where certificates or awards are not provided via accredited bodies (e.g. IIP or EFQM), there will always be more than one external assessment body.

One concern with external assessments is that they almost never build from any internal self-assessment/audit processes, though this is permitted by IAF (ref. 28). Typically external audits are carried out by a single assessor (sometimes a team for the initial certificate), who will personally gather all the evidence judged necessary. However, given the way internal and external auditors can be complementary (see table, section 3.2), it should be possible to build from a strong internal audit process but still ensure the independence needed for a Certification assessment. No example was found of this being done by an external accredited auditor.

A UK-based oil and gas production affiliate of a global company developed a strong internal EHS-MS model, including an annual self-assessment audit plan covering the whole organisation, in response to major hazards legislation. The US-based parent had a pre-existing global EHS audit process which mandated an external 'compliance audit' of the UK subsidiary every three years. Initially the two systems operated independently and the external audits were viewed by the UK organisation as time-consuming and resulting in very few improvement ideas. It was suggested an experienced external auditor should join one internal audit, and this was agreed by all involved to give significant benefits, with the internal and external auditors complementing each other, providing value-adding findings and identifying several opportunities for good-practice transfer.

Effective audits use a balance of evidence from documents, interviews and workplace observations, and these latter two activities tend to disrupt normal work activities. Where organisations have multiple certificates, the combination of internal audits plus regular external reviews and re-assessments can give rise to a 'death by audit' culture. This may be exacerbated if key clients also require audits for supply chain assurance.

Typically auditees ask for audits not to coincide with busy periods. In contrast, one organisation with 7 different external annual audit/assessment processes required all the external bodies to plan these during its busiest month, on the basis that in that period auditors would be able to see every business system operating at its current maximum effectiveness and efficiency.

A global certification body reported when interviewed for this project that requests for 'combined audits' are much more common than audits of 'integrated systems', as few organisations have yet attempted to create an IMS (see 3.7). Combined audits are attractive to clients who judge there is less overall disruption to their normal work. The challenge for the certification body is to deploy an audit team

with the necessary range of competences, and to ensure appropriate time allocation to each of the separate MS being audited.

In Sweden it is common for organisations to be certified to both ISO 9001 and 14001, and to have combined audits. The national accreditation body is developing guidance to ensure such audits are balanced and the certification process remains robust.

3.7 IMS and Certification

As outlined in section 3.5, the process for obtaining and maintaining multiple certificates can be very resource intensive. An alternative is to adopt internally an Integrated MS (IMS), and to seek a single certificate covering the required standards.

An organisation which uses a 'business systems' or IMS model from start-up is relatively unusual, one example was found during the interviews for this report, in the hospitality industry. More commonly, organisations adopt an IMS approach when they observe the limitations of less sophisticated approaches to business management. If the organisation is still small, this may not be too difficult. If it is already large, the changeover from partially effective 'procedures-based' arrangements to a fully integrated business systems approach can require significant resources.

Two global oil companies merged, both had excellent OSH results. One used a global EHSMS model, the other a global IMS model, which became the overall model – neither were certified systems. One busy UK operational site was visited 4 years later, the local 'Compliance Co-ordinator' for the IMS systems and documentation reported that all local documents had not yet been fully revised and integrated, though to an outsider the systems in place appeared very comprehensive.

Four organisations with well-developed IMS were visited for this report. Two used EFQM as a basis (hospitality industry and integrity assurance to process industry), one used an internal model (upstream oil & gas) and one used ISO 9001 plus Responsible Care (chemicals – ISO 9001 for the main business systems, Responsible Care for operational systems). Each of these had at least one additional certificate, but there were no specific internal processes to support these, just the external assessments. The immediate impression when visiting each of these organisations to discuss their business is that the main IMS influences everything they do, provides strong drivers for continual improvement and that any external certification is a by-product.

One global supplier of accredited external assessments advertises an "Integrated Assessment Service (IAS)" on its website. Among the advantages claimed are: reduced assessment costs; less disruption on-site; less disruption to valuable senior management time. This seems to target organisations which view assessment to recognised standards as 'cost and disruption' rather than 'opportunity for improvement' and 'part of normal business'.

3.8 Impacts of non-OSH MS on OSH performance

It is likely that adoption of a MS approach for non-OSH business systems will have some effects on OSH management processes, systems and procedures. For example, smaller organisations systematically documenting procedures for the first time report that this often empowers junior employees, as they are clearer about their responsibilities and able to make decisions in line with these procedures in preference to referring all decisions upwards. It is also likely that employees will be consulted as the procedures are developed. Having clear responsibilities and consulting employees about work processes

are also recognised as important pre-requisites for effective OSH management, so there may be some synergistic OSH benefits.

In addition, a QMS or EMS should identify potential causes of product non-conformance, or environmental impacts, some of which present co-incidental risk of injury or illness for employees. Better management of these risks will also improve OSH results. However, QMS in general are weak on 'major hazards' to the business, their effects and contingency planning, whereas consideration of such hazards is an important feature in OSHMS. Also QMS typically do not consider the 'hierarchy of controls' (inherent safety, prevention, control, mitigation) which are an important feature of effective OSHMS risk assessment and management.

An organisation with very strong internal EFQM-based improvement processes and which won a European Quality Award in 2003 nevertheless had a more 'compliance approach' to general health & safety management. Some hazards were managed using exemplary continual improvement systems, but this was not consistent.

Most importantly, a robust OSHMS process is used to systematically identify hazards to people, define and implement effective and efficient controls and ensure residual risks are acceptably low. Other MS may identify some, but not all, OSH hazards.

After an accident investigation, a food industry manufacturer with a strong Hazard Analysis and Critical Control Point (HACCP) process and generally good OSH record was cited by the UK regulator for inconsistent risk assessment. The company strongly disagreed with this finding and sought advice from an experienced OSHMS consultant, who after further investigation concurred with the regulator. The HACCP process identified some, but not all, OSH hazards and the company eventually recognised this. Steps were taken to remedy this defect, and to ensure the resulting additional controls were regularly monitored and reviewed – these minor additions were readily added to the existing HACCP process.

4. CONCLUSIONS

It is clear from the evidence and examples presented in Section 3 that adoption by an organisation of a formal OSHMS or IMS does not in all cases result in long-term, continual improvement of OSH results that such systems are designed to generate (see also section 5.3 below, for a well-known example, from Australia). The overall determining factor is not the quality of the MS model, but how well all its detailed elements are implemented. Key elements in all MS models are planned monitoring (by those responsible) and audit (by others who are independent), leading to senior management review and targeted improvement plans. Effective processes for such regular monitoring, audit and review are vital, but not easy to implement or to maintain, let alone to continually improve.

Those who are implementing high-quality MS almost universally report that external auditors are less effective at identifying improvement opportunities than internal ones. Thus, counter-intuitively, independent Certification of OSHMS does not guarantee continual improvement of OSHMS practices and results – though it does identify organisations not in compliance with minimum standards, and thus not yet ready for Certification. If an enterprise has a real desire for continual OSH improvement, not just compliance with a standard, then external and internal auditors combined are a better option (see Section 3.2) and internal auditors alone are a better way to start (see Section 3.4).

Similarly, attempts to integrate Q-, E- and OSH- Management Systems may, or may not, be beneficial for OSH results, depending how the integration is managed (see examples in Sections 3.5-3.8).

The next Section summarises ten good practices which, if adopted, help to ensure that OSHMS or IMS do lead to continual improvement in OSH results.

5. RECOMMENDED MS PRACTICES

Below are described the ten recommended MS practices to aid continual improvement of OHS results.

When a Q-, OSH- or IMS is appropriately implemented, it can have very beneficial effects on OSH results. This section summarises key findings about what 'appropriate implementation' means, based on the author's experience and also on the survey of MS standards and practices undertaken for this report. Some of these key findings are also referred to in section 3.

5.1 Ensure continual improvement, not assessment to a standard, is the main deliverable

Many organisations, and the people they employ, are more comfortable with the idea of working to fixed standards than of continual changes to business processes so as to give better and better results. Perhaps partly for that reason, even standards such as ISO 9001:2000, which have the concept of continual improvement built-in to their structure, are often not regarded in that light. It is also clear from the survey that MS which start with self-assessment and add external assessment only after MS effectiveness and efficiency begin to improve, are more likely to generate a 'continual improvement culture' from the start (see section 3.4).

5.2 Ensure an effective internal audit process

Evidence from this survey is overwhelming that the reports from well-trained and motivated internal auditors provide more insights and opportunities for improvement than those from external assessors. These will include both effectiveness and efficiency improvements. However, many external stakeholders find it hard to believe that internal audit reports will be open and honest about deficiencies identified, so external audit/assessment may also be required to meet their expectations – external auditors are likely to concentrate on effectiveness, though the best external auditors will also appreciate opportunities for increased efficiency (see sections 3.2 and 3.4).

5.3 Ensure the adopted MS is not overly bureaucratic

Whilst there are many advantages in a systematic approach to OSH management, it is possible to place so much emphasis on the need for adherence to defined procedures that creativity, initiative and the ability to anticipate new or changed hazards and risks become stifled. The emphasis must be on the results, and how effective and efficient the OSHMS or IMS is for continually improving these, rather than on how comprehensive the MS is on paper.

An important area not easily managed via a formal MS is the 'organisational culture', which includes the issue of the extent to which non-compliant behaviour by individuals is, or is not, tolerated.

The explosion and fire at Longford, Australia in 1998 impacted not only people at the facility, but the whole state of Victoria (ref. 29), yet occurred in an organisation with a highly-developed and complex IMS/OSHMS (Operational Integrity Management System – OIMS). Findings of the subsequent Royal Commission included "… *there was a tendency for the administration of OIMS to take on a life of its own, divorced from operations in the field. Indeed, it seemed that in some respects, concentration upon the development and maintenance of the system diverted attention from what was actually happening in the practical functioning of the plants at Longford."* This significant disconnection between documented standards and the operations culture was apparently not high-lighted by the regular OIMS audits and reviews carried out prior to the explosion.

5.4 Use audit teams in preference to individuals

All audits require the use of judgement – about how much evidence to gather, in what form, and how to interpret the balance of that evidence (it will never be 100% consistent). Team audits allow: healthy challenge of individual judgements, thus guarding against undue bias – positive or negative; a broader range of technical and business competence than usually available from an individual; mentoring of less experienced auditors. Teams are particularly valuable for auditing: IMS; large and complex organisations; areas where the findings may have significant business impact, e.g. for high-business-value awards/recognition, including initial assessment against a recognised standard, or when significant non-conformances have been previously identified.

The market pressures on external assessment and Certification services are often such that lone auditors are used extensively. Except for very small organisations, this is not best practice when continual improvement is the primary requirement (see section 3.1).

5.5 Ensure sufficient OSH auditor competence for OSH-MS audits

This may seem obvious. Unfortunately some external assessment bodies do not require their auditors to have any recognised OSH qualifications, or experience. They may have excellent audit skills, but if they are not familiar with hazards and good practice controls in the sector being audited, their reports will have little value (see section 3.1).

When a team is used, it is usually sufficient if one member has these professional skills.

5.6 Ensure external audits build from the internal audit process

External audits typically include a review of the internal audit plan, and key findings. However, closer integration is possible, provided the internal audit process is of high quality. The ultimate goal should be to occasionally merge the audit teams and processes, in place of separate surveillance and re-certification visits (see sections 3.2 and 3.6).

5.7 Ensure value, rather than cost, is the main criteria when selecting external audit/assessment services

This is self-evident when audit is viewed as providing real opportunities for improvement, rather than being just a 'cost of doing business'. Note the experience of the European Quality Award Winner, detailed in the box in section 3.1, and the article on the LRQA website, ref. 32.

5.8 Do not rely on audits (self-assessment or external assessment) as the sole source for improvement ideas

Audit by its nature can take place only occasionally – typically no more than once per year for each part of an organisation. It gives a snapshot of conditions at that time, as judged by a few people, sometimes only one. In contrast, routine internal monitoring of business processes should be much more frequent, is carried out by many people at different levels in the organisation, and will typically result in more detailed information. In addition, there will be occasions when the controls in place fail to prevent a hazard being realised, and the consequences are injury, illness, damage, or a 'near-miss' event. These too are rich sources of data about the OSH-MS – was the hazard identified, if not, why? Were the specified controls in place, if not, why? Are additional controls required? How can they be made most effective and most efficient?

In the organisations interviewed for this report and with the most effective MS, regular management reviews were much more frequent than once per year, and improvement plans were updated perhaps quarterly. Audit results were fed into these reviews, but were not the major source of data.

5.9 Integrate business processes at high-level, not just via linked or common MS Certificates

A true IMS will include integration of: reporting lines for relevant discipline advisors; holistic business risk identification and controls assessment; aligned business processes to manage the various types of risk; internal and external reporting standards which cover all key risks. It is this type of integration which will reveal synergies between Q-, E-, and OSH processes, rather than more superficial integration via a common Certificate, or a single Certification body.

5.10 Chemical businesses should consider 'Responsible Care' as the preferred option when moving to an IMS

RCMS is a mature standard with many supporting tools and processes, operating internationally and likely to require increased international alignment of RC systems from late-2004. It is not a panacea, for example one study suggests that US-based RC participants improved their environmental performance more slowly than non-participants (ref. 33). However changes in safety performance were not studied and changes to the US RC system have since been made (see 2.4). The UK version of RCMS already fully incorporates points 5.1, 5.2, 5.4, 5.5, 5.7, 5.8 and 5.9 (partial) outlined above.

6. ACKNOWLEDGEMENTS

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ANNEX

CORE AUDITOR COMPETENCIES

Source – Investors in People website (ref. 21)

Client focus

- Appreciates how an organisation operates in different client sectors
- Tailors approach to align with the client's goals and circumstances
- Respects the client's need for information, commitment and confidentiality
- Is fully aware of the impact of change on an organisation

Credibility/influencing

- Gains respect by operating in a professional and credible manner
- Engenders co-operation by considering the perspective of others
- Handles disagreements or resistance constructively and fairly
- Is confident about own knowledge and ability

Critical reasoning

- Thinks strategically, takes a holistic view of the way forward
- Seeks the right information to analyse a situation and draw sound conclusions
- Generates justifiable alternatives to solve a problem or reach an outcome
- Applies knowledge/experience effectively, yet is open to exploring new ideas

Communication

- Has a written style that is clear and has impact
- Delivers thoughts in straightforward terms, but maintains listener interest
- Listens and responds effectively, checks understanding
- Has a rigorous but impartial questioning style

Planning

- Effectively links objectives and actions to an overall strategy
- Prioritises and schedules to ensure optimum use of time and resource
- Is sufficiently organised and flexible to switch between several ongoing tasks
- Recognises when plans need to be adapted and acts accordingly

Managing relationships

- Adapts personal style to empathise with a whole range of people
- Builds and maintains rapport over sustained periods
- Invites a two-way exchange of information and feedback with others
- Is well received as a team member and as the leader of a team

Drive

- Strives to add value by achieving results in the best way
- Develops self to improve performance
- Remains positive and maintains effort despite setbacks, changes or ambiguities
- Can achieve results through the guided actions of others