Environmental Management Standards – ISO 14,001/ISM Gap Analysis

International Marine Contractors Association

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The International Marine Contractors Association (IMCA) is the international trade association representing offshore, marine and underwater engineering companies.

IMCA promotes improvements in quality, health, safety, environmental and technical standards through the publication of information notes, codes of practice and by other appropriate means.

Members are self-regulating through the adoption of IMCA guidelines as appropriate. They commit to act as responsible members by following relevant guidelines and being willing to be audited against compliance with them by their clients.

There are two core activities that relate to all members:

- Competence & Training
- Safety, Environment & Legislation

The Association is organised through four distinct divisions, each covering a specific area of members' interests: Diving, Marine, Offshore Survey, Remote Systems & ROV.

There are also five regional sections which facilitate work on issues affecting members in their local geographic area – Asia-Pacific, Central & North America, Europe & Africa, Middle East & India and South America.

IMCA S&L 004

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Preface

IMCA welcomed the move by IMO to add a new Chapter IX to SOLAS dealing with the "*Management for the Safe Operation of Ships*". This provides the basis for the "*International Management Code for the Safe Operation of Ships and for Pollution Prevention*" – the International Safety Management (ISM) Code. All ships over 500 grt and MODUs have to comply by 1 July 2002.

Many IMCA member vessels have been in compliance for a number of years, well ahead of the deadline. IMCA considers ISM to be the appropriate vehicle for safety and environmental management of members' vessels.

The development and implementation of the ISO 14,001 Environmental Management Systems standard has taken place in parallel. Increased societal expectations on companies' environmental performance have encouraged uptake by industrial undertakings onshore. A number of E&P companies have taken this step for their onshore and offshore operations.

Those operating under ISO 14,001 will need to ensure that their suppliers and contractors are playing their part in minimising the environmental impact of their operations. The ISM Code provides a good instrument for the operators of specialised vessels to do so. However they need to know the expectations of a client working to ISO 14,001 and some may wish to take the step of acquiring ISO 14,001 accreditation for their own operations.

IMCA's Safety & Legislation Core Committee commissioned this gap analysis to brief its members when faced with making decisions in this area.

1 Executive Summary

IMCA's members need to understand the extent to which ISO 14,001 requirements will exceed the requirements of the IMO's International Safety Management Code (ISM). ISES was requested to prepare a 'gap analysis' between the two standards according to a format agreed between the two parties.

The gap analysis suggests that the two standards are reasonably closely aligned. The major additional requirements of ISO 14,001 are in relation to: Identification of environmental impacts & aspects; and requirements for external dialogue. In a number of other areas, although similar system elements are required, the detailed expectations in the ISO 14,001 standard exceed that in the ISM code. A discussion of these gaps is provided in the conclusions/recommendation section below. The scope for costs savings arising from a number of joint initiatives is also identified.

The detailed ISO 14,001 – ISM gap analysis is provided as an attachment to this document. A brief description of the layout of this table and the approach taken to developing it are provided in the following background section.

2 Background to Gap Analysis

ISO 14,001 is a specification document, with additional non-obligatory guidance. This gap analysis has been based largely on the specification component of the document, the component which is intended to form the basis of certification or self-declaration.

The gap analysis is presented as a 5-column table. The second column of the table breaks down the ISO 14,001 specification requirements under various headings. These requirements are, as far as is possible, stated in the same words (or paraphrases) as are used in the standard. The first column of the table provides references to the various sub headings within the standard.

Column 4 of the table provides information on the existence of similar requirements within ISM. Where possible the exact wording (or paraphrases) from the ISM code are used. Column 3 provides references to the various sub headings in the code.

The final column in the table summarises the gaps; these should be relatively self evident from the information in the previous columns. 'Significant' gaps are highlighted in bold. Less significant gaps and implementation considerations are in normal typeface. Some of the comments in this column are based on the author's experience of ISO1001 implementation and dealings with certifying agencies.

3 Conclusions/Recommendations

The major additional requirements of ISO 14,001 are in relation to: Identification of environmental impacts & aspects; and requirements for external dialogue. In a number of other areas, although similar system elements are required, the detailed expectations in the ISO 14,001 standard exceed that in the ISM code. A discussion of these gaps, along with some suggestions for ways of closing them, are provided below.

3.1 Identification of Environmental Impacts & Aspects

ISO 14,001 requires a thorough and documented assessment of all environmental aspects and impacts; and a subsequent ranking of these impacts and aspects according to their 'significance'. Although this identification process must be demonstrable and thorough, only those aspects that are identified by the company as significant have to be 'managed'.

Although the criteria for significance would need to be set by each company individually, the opportunity for similar organisations carrying out a common 'identification' exercise offers great scope for savings.

3.2 External Dialogue

Under a number of the subject headings used in the gap analysis, the ISO standard required the issue of external/stakeholder dialogue to be addressed. In some cases, compliance would be a relatively straightforward exercise; for example, in one situation the company need only document its decision

on whether or not to embark on 'external dialogue'. However, in the author's experience, the issue of external dialogue is a sensitive one for the management of many organisations. For this reason, although compliance with these requirements is often not a problem in practice, the gap has been noted as 'significant'.

3.3 Detailed Expectations

In a number of other areas, although similar system elements are required in both standards, the detailed expectations in the ISO 14,001 standard exceed that in the ISM code. In particular, this applies to the following:

- Environmental Management Programme/Plan
- Monitoring & Measurement Programmes
- Management Reviews

In two other areas, there is a need to realign existing programmes to address some of the more prescriptive components of the ISO 14,001 requirements:

- ISO 14,001 Training
- ISO 14,001 Auditing.

As with the development of 'common impact/aspect lists', there is some scope for joint initiatives in these areas. In particular, the development of 'industry-specific' monitoring/measurement programmes, training packs and audit protocols would offer scope for savings and economies of scale.

ISO 14,001		ISM Code		Gaps/Implementation Considerations
Ref.	**Requirement**	**Ref.**	**Requirement**	**(note scope for significant gaps are highlighted in bold)**
4.2	***Environmental Policy***	***2***	***Environmental Policy***	
4.2	Top management must define the organisation's environmental policy	*2.1*	Company should establish a safety and environmental policy	Ensure ISM derived Policy statements are signed off by the most senior levels of the organisation.
4.2.a	Policy must be 'appropriate to the scope and impacts of the organisation's activities, products or services'	*1.2.1* *1.3* *2.2*	Objectives of code are to '… avoid damage … particularly to the marine environment …' '… the code should apply to all ships …' '… ensure that the policy is implemented and maintained … both at ship based and shore based locations'	By implication, the scope of any ISO 14,001 system based on ISM would relate only to 'ship and associated shore based marine pollution'. For companies involved in a much wider range of services/impacts, auditors may consider this scope to be overly limiting.
4.2.b,c	Policy must include a clearly defined commitment to Continual improvement Prevention of pollution Compliance with relevant environmental legislation and regulations	*2.1//1.2*	Policy to be linked to objectives – objectives to be linked to 'avoidance of damage to the marine environment', 'continuous improvement in safety management' and 'compliance with mandatory rules and regulations' (Note. Preamble 1 and 6 refers to Pollution Prevention)	Some modification to ISM derived policies is likely in order to provide explicit references to 'continuous improvement', 'pollution prevention' and 'legislative compliance'
4.2.e,f	Policy to be: communicated to all staff made available to the public subject to review/revision	*N/A*	No specific reference to communication/review and revision of policy. (1.4.6 notes need for management review of safety management system)	Some modification of Management Review processes may be required in order to explicitly include review of the Policy. There is a need to document a process for internal and external communication of the Policy.
4.2.d	Policy should provide the basis for environmental objectives and targets.	*2.1*	Policy should be linked to objectives (1.2)	No gap.

ISO 14,001		ISM Code		Gaps/Implementation Considerations
Ref.	**Requirement**	**Ref.**	**Requirement**	**(note scope for significant gaps are highlighted in bold)**
4.3	***Planning***			
4.3.1	***Environmental aspects***			
	Organisation should establish and maintained a documented procedure to identify its environmental aspects and impacts. 'ASPECTS' are defined in the standard as 'an element of an organisation's activities, products or services that can interact with the environment.' 'IMPACTS' are defined in the standard as 'any change to the environment … wholly or partially resulting from an organisation's activities, products or services.'	*1.2*	No explicit requirement exists for a procedure to identify environmental aspects and impacts. No explicit definition of impacts or aspects exists. However environmental objectives of the code are to 'avoid damage to the environment', 'comply with mandatory rules and regulations' and 'prepare for emergencies related to environmental protection'	There is a need to develop an explicit process/procedure to identify and document environmental aspects and impacts. Typically this would be expected to include routine marine discharges (machinery space discharge, anti-fouling, etc); solid waste management issues and atmospheric emissions (exhausts, halons, etc). It would also be expected that aspects and impact registers should also reflect indirect effects (terminals, shore bases, etc). NOTE: although aspect and impact identification must be a demonstrably 'thorough' process, not all aspects and impacts have to be 'managed'. Assessment of 'significance' (see below) forms the basis of an organisations prioritised environmental management plan with regard to aspects and impacts.
	Has the methodology for ranking significant impacts been defined and consistently applied?	*N/A*		The organisation must have an explicit process/procedure for identifying those impacts and aspects that are 'significant' and will therefore be 'managed.' For ship-based activities, 'assessment of significance' would probably be done centrally. Auditors would typically expect such a process to reflect some of the following: priorities implicit in the Policy and relevant 'Corporate' objectives. context and scale of the impacts (i.e. contribution to overall level of pollution). some degree of hindcasting/forecasting regarding impacts. emergency and abnormal operations as well as routine operations.
	Has the organisation ensured that the aspects related to these significant impacts are considered in setting its environmental objectives?	*1.2*	Environmental objectives of the code are to 'avoid damage to the environment', 'comply with mandatory rules and regulations' and 'prepare for emergencies related to environmental protection'	Significant impacts should be explicitly linked to the organisations environmental objectives.

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Ref.	**Requirement**	**Ref.**	**Requirement**	**(note scope for significant gaps are highlighted in bold)**
	Does the organisation have procedures which keep aspect/impact registers up-to-date?	*N/A*		Procedures for identification of impacts and aspects and their significance must involve a requirement for periodic review. For ship-based activities it is unlikely that dramatic changes will happen frequently. It should be possible to justify relatively infrequent review (every 3-5 years?)
4.3.2	***Legal and other requirements***			
	The organisation must established and maintain a procedure to identify and have access to legal and other requirements.	*1.2.3*	The Safety Management System should ensure: compliance with mandatory rules and regulations…applicable codes, guidelines and standards.	The ISM code does not explicitly require a Legislative Compliance Procedure (LCP). However, section 1.2.3 of the code implicitly requires that such a system be in place. In most cases it will probably be sufficient to document existing practice as being the LCP.
	Are the legal and other requirements identified by the organisation sufficiently comprehensive to cover the full scope of the EMS ?	*1.2*	Environmental objectives of the code are to 'avoid damage to the environment', 'comply with mandatory rules and regulations' and 'prepare for emergencies related to environmental protection'	It may be necessary to ensure that the scope of the implicit LCP covers the full range of impacts and aspects identified (e.g. atmospheric emissions, waste management, etc)
	Can legal compliance be demonstrated and verified?	*13*	The Company should be issued with a document of compliance with the ISM code by an organisation recognised by the administration …	Given the focus on 'legal compliance' within ISO 14,001, auditors often ask how compliance can be demonstrated and verified. The existence of an explicit framework for certification, verification and control within the ISM code should provide a straightforward mechanism for addressing this issue.
4.3.3	***Objectives and Targets***			
	The organisation should set and document environmental objectives and targets (O&Ts) for each relevant function and level within the organisation.	*1.2.2* *2.2*	The code requires that the company should have objectives. The company should ensure that its policy is implemented at all levels of the organisation.	The ISO 14,001 standard requires a greater degree of documented 'cascading' of environmental objectives within an organisation than is explicitly stated in the ISM code.

ISO 14,001		ISM Code		Gaps/Implementation Considerations
Ref.	**Requirement**	**Ref.**	**Requirement**	**(note scope for significant gaps are highlighted in bold)**
	When establishing and reviewing its O&T, the organisation take into account the following: its commitment to Pollution Prevention legal and other requirements, significant impacts technological options financial, operational and business requirements views of interested parties?	*1.2*	The Safety Management objectives should: establish safeguards against all identified risks prepare for emergencies related to environmental protection ensure compliance with mandatory rules, regulations, codes, guidelines and standards.	It is probably arguable that the only gap with regard to the 'breadth' of coverage of objectives is in regard to 'significant aspects'. It would probably be feasible to argue that 'interested parties', 'technological options' and 'financial, operational and business requirements' were adequately covered by the range of voluntary codes and guidelines from IMO, etc.
4.3.4	***Environmental management programme***			
	The organisation shall establish and maintained a programme for achieving its objectives and targets.	*2.2* *7*	The company should ensure that its policy is implemented … at all levels of the organisation. The company should establish procedures for the preparation of plans and instructions for key shipboard operations.	The existence of a current, documented, Environmental Management Programme or Plan (EMP) linked to the organisation's objectives and targets is a central requirement of ISO 14,001. Although ISM addresses the need for a plan, It does not require explicit linkages to the O&Ts.
	The programme shall include designated responsibilities for achieving objectives and targets at each relevant function and level of the organisation.	*3.2*	The company should define and document the responsibilities of all personnel … affecting … pollution prevention.	It is likely that roles and responsibilities defined under ISM would provide satisfactory input to an EMP in the majority of cases.
	The programme shall include resources and timeframe by which the various objectives and targets are to be achieved.	*3.3*	The company is responsible for ensuring … adequate resources …	It is likely that resources defined under ISM would provide satisfactory input to an EMP in the majority of cases. ISM code does not explicitly require the identification of timetables for achieving elements of an EMP.
	Management Programmes shall take into account new developments or new or modified activities, products or services.	*N/A*		The Environmental Management Planning process should include the ability to recognise and respond to new developments or new or modified activities or services
4.4	***Implementation and operation***			
4.4.1	***Structure and responsibility***			
	Relevant authorities, roles and responsibilities should be clearly defined, documented and communicated to relevant parties.	*3.2* *5.2*	The company should define and document the responsibility, authority and interrelation of all personnel … affecting pollution prevention. SMS should contain a clear statement emphasising the Master's authority.	No gap.

ISO 14,001		ISM Code		Gaps/Implementation Considerations
Ref.	**Requirement**	**Ref.**	**Requirement**	**(note scope for significant gaps are highlighted in bold)**
	A management representative's role should be clearly defined. This individual should be ultimately responsible for ensuring that EMS requirements are implemented and that performance is reported to top management.	*4*	… every company should designate a person having direct access to the highest levels of management … who is responsible for monitoring the … pollution prevention aspects of operations and ensuring adequate resources …	No gap.
	The size and scale of the resources that have been made available must be adequate from the standpoint of: Skills and competencies. Equipment and technology. Budgets and financial resources.	*3.3*	The company is responsible for ensuring that adequate resources and shore-based support are provided to enable the designated person or persons to carry out their function.	No gap.
4.4.2	***Training, awareness and competence***			
	A procedure shall be in place in order to ensure appropriate training for all personnel who, through their work may create a significant impact on the environment?	*6.5*	The company shall establish and maintain procedures for identifying and providing training in support of the SMS.	No gap
	Personnel with scope for significant impact must be able to demonstrate competence based on education, training and/or experience.	*6.2* *6.1.2*	The company shall ensure that the ship is manned with qualified, certificated and medically fit seafarers…. The company shall ensure that the ship's master is fully conversant with the company's SMS.	No gap
	A procedure shall be in place to ensure that all members of the workforce have received appropriate training with regard to: Policy and structure of the EMS in relation to ISO 14,001 … Significant environmental impacts relating to their job. Individual roles and responsibilities with regard to the EMS. Potential consequences of departure from agreed operating procedures.	*6.6* *6.4* *6.3*	The company shall establish procedures by which the ship's personnel receive relevant information on the SMS … The company should ensure that all personnel involved in the SMS have an adequate understanding of relevant rules, regulations, codes and guidelines. The company should establish procedures to ensure that new personnel are given proper familiarisation with regard to their duties.	All companies embarking on ISO 14,001 certification have discovered the need for significant 'baseline training' with regard to ISO 14,001, as well as the need to modify induction procedures. This need for additional training is largely driven by auditors' invariable desire to question relatively junior members of staff regarding such things as their understanding of 'aspects', significant impacts related to their role, key procedures, etc.

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Ref.	**Requirement**	**Ref.**	**Requirement**	**(note scope for significant gaps are highlighted in bold)**
4.4.3	***Communications***			
	The organisation shall establish appropriate internal communications procedures between the various levels and functions of the organisation.	*1.4.3* *5.1* *9.1* *10.3* *6.6* *6.7*	Every company … should define … lines of communication between and amongst shore and shipboard personnel. … the ships master is responsible for: motivating the crew in the implementation and observance of the environmental protection policy … verifying that requirements are observed. reviewing the SMS and reporting deficiencies. The SMS shall include procedures ensuring that non-conformances, accidents and hazardous situations are reported. The company shall establish procedures to identify equipment and technical systems, the sudden operational failure of which, may result in a hazardous situation. Establish procedures to ensure that ships personnel receive information in a language understood by them. The company should ensure that ship's personnel are able to communicate effectively in the execution of their duties in relation to the SMS.	
	The organisation shall establish appropriate procedures for communicating with external stakeholders and dealing with complaints. Relevant stakeholders may include: Contractors and suppliers. Regulators. Partners. Customers, etc.	*N/A*		ISM code makes no stipulation with regard to external communication requirements. In practice this element usually involves documenting practices within a number of departments: purchasing, public affairs, HSE, etc.
	The organisation shall consider its strategy for external communication on its significant environmental aspects and document its decision.	*N/A*		ISM code makes no stipulation with regard to proactive external communication regarding environmental impacts. Unless a management decision is made to embark on public reporting of environmental performance, the requirements of this element can be easily satisfied within the minutes of the first Management Review Meeting.

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Ref.	**Requirement**	**Ref.**	**Requirement**	**(note scope for significant gaps are highlighted in bold)**
4.4.4	***Environmental management system documentation***			
	A Management System Manual should be developed as a permanent documented reference within the system.	*11.3*	The documents used to describe and implement the SMS may be referred to as the Safety Management Manual.	No gap
	The manual should sufficiently describe the core elements of the system and their interaction.	*11.3*	The Safety Management Manual and other documentation should be kept in a form that the company considers most effective.	No gap
	The document should direct the user to related documentation as appropriate.	*11.3*	The Safety Management Manual and other documentation should be kept in a form that the company considers most effective.	The Management System Manual should contain up-to-date references to other more detailed controlled documents as relevant.
4.4.5	***Document control***			
	Procedures shall be established for controlling documentation which include the following as appropriate: So that documents can be located. So that documents are revision serviced (including dating, revision authorities and removal of obsolete documents from circulation). So that documents are subject to controlled distribution (including being available at all relevant locations) So that legal and other such documents are stored for the appropriate time.	*11*	The company should establish and maintain procedures to control all documents and data so that they are: Available at all relevant locations Changes are reviewed and approved by authorised personnel. Obsolete documents are removed.	Document control procedures should include the requirement, where appropriate, to retain copies of obsolete legal or other such documents on file for such a period of time as is required.
4.4.6	***Operational control***			
	Documented operational control procedures should be available for the management of significant environmental aspects. For example: procedures for relevant maintenance activities. documented procedures should be in place for those operations for which the absence of clear guidelines could give rise to deviations from policy objectives (e.g. absence of offload procedures giving rise to the risk of spillage). Where appropriate, operating criteria should be	*1.4.2* *7* *10.1*	Every company should develop … instructions and procedures to ensure … protection of the environment in compliance with relevant international and flag state legislation. The company should establish procedures for … key shipboard operations … concerning prevention of pollution. The company should establish procedures to ensure that the ship is maintained …	ISO 14,001 links operational control to 'significant aspects'. Moreover, the standard identifies 4 'subsets' of operational control of which only 1 (maintenance) is explicitly addressed in the ISM code. It may be appropriate to reassess the full range of operational controls in place for significant environmental aspects.

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Ref.	**Requirement**	**Ref.**	**Requirement**	**(note scope for significant gaps are highlighted in bold)**
	stipulated in procedures (e.g. oil content criteria for machinery space drains discharge, bunkering operations not to be started during hours of darkness, etc). Where appropriate, procedures should be in place to manage the relevant environmental aspects associated with the use of goods and services (e.g. purchasing criteria for anti-fouling products or washdown chemicals, etc)	*10.2*	The company should ensure….that ship inspections are held at appropriate intervals.	
4.4.7	***Emergency preparedness and response***			
	The potential for environmental impacts arising from accidents and emergencies must be identified.	*8.1*	The company should establish procedures to identify and describe…..emergency shipboard situations.	No gap
	Appropriate emergency response plans should have been developed.	*8.1* *8.3* *1.4.5*	The company should establish procedures to …..respond to emergency shipboard situations. …ensure that the company can at any time respond to emergency situations involving its ships. The company should develop procedures to prepare for and respond to emergency situations.	No gap
	Records should be maintained to demonstrate that emergency plans have been reviewed, and where appropriate, amended after events have occurred.	*9.1*	The SMS should include procedures ensuring that….accidents…are analysed with the objective of improving pollution prevention.	No gap
	The organisation should carry out periodic exercises of its emergency plans.	*8.2*	The company should establish programmes for drills and exercises…	No gap
4.5	***Checking and corrective action***			
4.5.1	***Monitoring and measurement***			
	The organisation shall establish procedures to regularly monitor and measure those characteristics of its operations that can have a significant impact. This shall include: performance tracking information. application of operational controls. conformance with objectives and targets.	*10.2* *10.3*	The company should ensure that inspections are held at appropriate intervals. The SMS should provide for measures aimed at promoting the reliability of critical equipment or systems.	ISO 14,001 contains more specific requirements with regard to establishing a monitoring and measurement programme than is contained in ISM. However, many of the likely elements of a monitoring programme (e.g. Oil Spill Record Book, MEPC sewage treatment plant testing requirements, etc) are likely to already be in place. Since compliance is likely to be achieved by 'compilation' of existing initiatives, this gap is not viewed as being a significant one.

ISO 14,001		ISM Code		Gaps/Implementation Considerations
Ref.	**Requirement**	**Ref.**	**Requirement**	**(note scope for significant gaps are highlighted in bold)**
	Procedures shall be established for recording of calibration and maintenance of monitoring equipment.		Not specified in ISM code, but other guidelines/codes address a number of calibration issues	See above.
	Procedures shall be put in place for evaluating compliance with legal and regulatory requirements.	*13*	A document of compliance will be issued for every company complying with the requirements of the ISM code by an organisation recognised by the administration …	No gap
4.5.2	***Non-conformance and corrective and preventative action***			
	Responsibilities must be clearly defined for investigating non-conformities and for taking corrective actions.	*9.1*	The SMS should include procedures ensuring that non-conformities are reported, investigated and analysed…	Ensure that non-conformance procedures include clearly defined responsibilities.
	Records should be available which allow it to be clearly demonstrated that corrective actions are identified and are eventually closed out.	*9.2*	The company should establish procedures for the implementation of corrective action.	No gap
	Non conformance procedures should be organised in such a way that more resources are applied to the more complex/serious non-conformances.	*N/A*		Incident/near miss investigation procedures should reflect a hierarchy of incidents (eg more serious incidents being investigated by more senior teams and requiring more rapid close out of actions)
4.5.3	***Records***			
	Legible, identifiable, traceable and retrievable records must be available with regard to: legislation/regulation (including breaches), environmental aspects, training, communications from external interested parties, non-conformance/incidents investigation and action closeout, monitoring (inc. calibration, etc) audits (including demonstrating conformance to ISO 14,001) management reviews	*11.1* *11.3*	The company should establish and maintain procedures to control all documents and data which are relevant to the SMS. Each ship should carry on board all documentation relevant to that ship.	ISO 14,001 contains more specific requirements with regard to record-keeping than is contained in ISM. However, with the single exception of 'environmental aspects/impacts', many of the records identified are likely to already be in place as a result of the requirements of the ISM code. Since compliance is likely to be achieved by documenting existing record keeping practices, this gap is not viewed as being a significant one.

ISO 14,001		ISM Code		Gaps/Implementation Considerations
Ref.	**Requirement**	**Ref.**	**Requirement**	**(note scope for significant gaps are highlighted in bold)**
	Where appropriate, additional records should be kept which may include (for example): Facility/Process information Contractor/Supplier information Conformance with Policy Commitments. Emergency Preparedness	*N/A*		See above
	Appropriate record management systems shall be in place (storage/retrieval procedures, responsibilities/sign-off, retention times, etc)	*11.1*	The company should establish and maintain procedures to control all documents and data which are relevant to the SMS.	No gap
4.5.4	***Environmental management system audit***			
	Environmental Management System audit procedures/protocols should clearly identify scope, methodologies, auditor competence/impartiality, audit responsibilities and management reporting requirements.	*12.1* *12.3* *12.4* *12.5*	The company should carry out internal safety audits to verify whether … pollution prevention activities comply with the SMS. Audits and corrective actions should be carried out in accordance with documented procedures. Auditors should be independent so far as is reasonably practicable. Results of audits should be brought to the attention of all personnel having responsibility in the area involved.	Audit programmes should additionally identify responsible parties and required auditor competence
	Audit procedures/protocols should cover all the requirements of ISO 14,001.	*N/A*		Audit Protocols should be amended to cover the requirements of ISO 14,001.
	The overall EMS audit programme (coverage, frequency, etc) should reflect the environmental importance of the various activities with which the organisation is involved.	*N/A*		Audit plans should document the reason for the particular coverage/frequency of audits in the context of the environmental importance of the company's various activities.

ISO 14,001		ISM Code		Gaps/Implementation Considerations
Ref.	**Requirement**	**Ref.**	**Requirement**	**(note scope for significant gaps are highlighted in bold)**
4.6	***Management Review***			
	A process of Management Reviews should be initiated, the frequency of these reviews should be documented	*1.4.6*	The company should develop … procedures for … management reviews.	ISO 14,001 contains more specific requirements with regard to Management Reviews than are contained in ISM. However, Management Reviews are already required within the code. Compliance with the requirements of ISO 14,001 can simply be achieved by ensuring that: Frequencies are documented Standardised agendas are used to cover the issues listed in the first column. Records of Management Reviews are maintained.
	Records of Management Reviews (agenda, attendance, minutes, etc) should be maintained.	*N/A*		See above
	Input to Management Reviews should include issues such as: the results of EMS audits, review of non-conformities, performance against objectives and targets, stakeholder concerns, changing business circumstances, and the need for continual improvement.	*12.6*	Management personnel responsible for the area involved should take timely corrective action on deficiencies found in … verification, review and evaluation processes.	See above
	In the light of the above, Management Review discussions should address the possible need for changes to policy, objectives and other elements of the management system. Agreed changes should be documented.	*12.2*	The company should periodically evaluate the efficiency of and, where needed, review the SMS in accordance with procedures established by the company.	See above