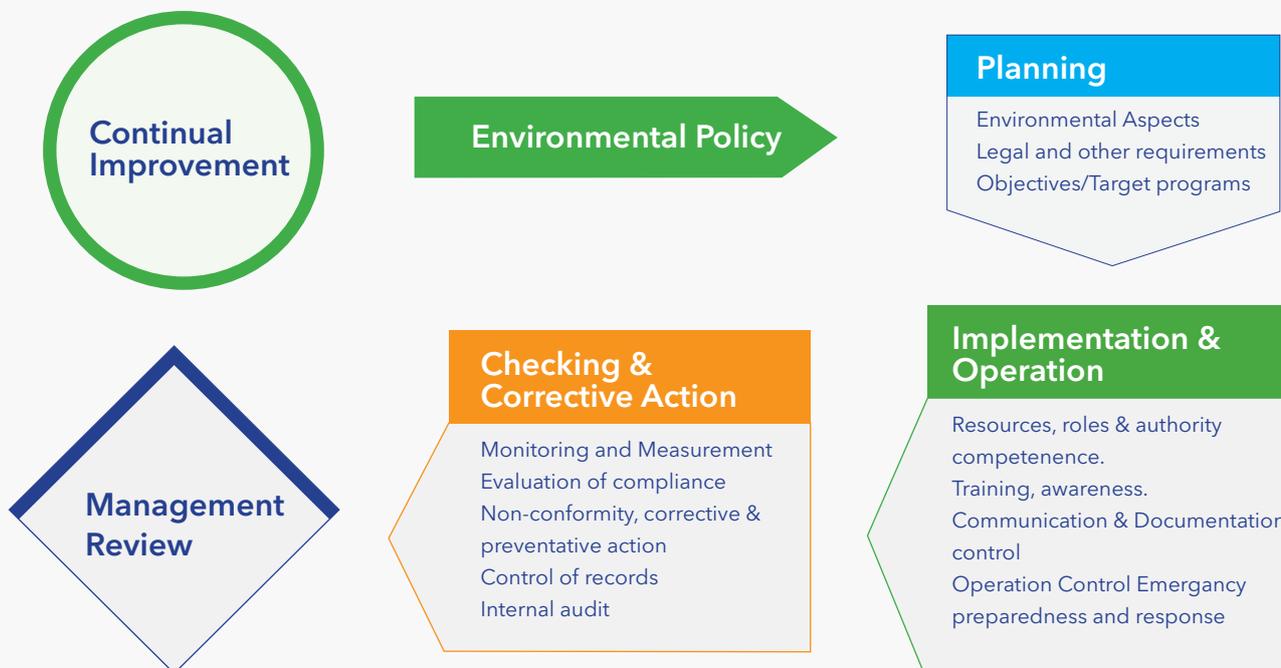# ISO 14001:2004 GUIDANCE DOCUMENT ENVIRONMENTAL MANAGEMENT SYSTEM

This guide is relevant to ISO 14001:2004. In 2015 there was a revision to the standard.
For the information on ISO 14001:2015 please visit www.dnvgl.com.

The model below illustrates the Environmental Management System (EMS) elements based on ISO 14001 and the on-going process of continual improvement via the Plan-Do-Check-Act (PDCA) approach.

Continual Improvement

Environmental Policy

Planning
Environmental Aspects
Legal and other requirements
Objectives/Target programs

Implementation & Operation
Resources, roles & authority competenence.
Training, awareness.
Communication & Documentation control
Operation Control Emergancy preparedness and response

Checking & Corrective Action
Monitoring and Measurement
Evaluation of compliance
Non-conformity, corrective & preventative action
Control of records
Internal audit

Management Review

For an organisation to develop an EMS it must:

- Establish its current position with regard to the environment;
- Plan what it needs to achieve;
- Implement and operate the plan(s);
- Measure performance against the plan(s); and
- Take action based on the results (where desired or required).

The latter may involve changing plans. This should be an on-going process that results in continual improvement.

ISO 14001 STRUCTURE

General requirements	4.1
Environmental policy	4.2
Planning	4.3.1 Environmental aspects 4.3.2 Legal and other requirements 4.3.3 Objectives, targets and programmes
Implementation and operation	4.4.1 Resources, roles, responsibility and authority 4.4.2 Competence, training and awareness 4.4.3 Communication 4.4.4 Documentation 4.4.5 Control of documents 4.4.6 Operational control 4.4.7 Emergency preparedness and response
Checking	4.5.1 Monitoring and measurement 4.5.2 Evaluation of compliance 4.5.3 Nonconformity, corrective action and preventive action 4.5.4 Control of records 4.5.5 Internal audit
Management review	4.6

General requirements (4.1)

The organisation needs to define and document the scope of the EMS and ensure that it is implemented and supported throughout the organisation. Continual improvement of the EMS is required.

Before implementing an EMS, some useful initial questions are:

- How does the organisation interact with the environment and what is the significance of the interaction?
- What regulations are applicable to the business?
- What are the current levels of performance?
- What environmental practices are currently in place?
- What management systems are currently in place?
- Are there any important interfaces that need to be managed (e.g. a shared site)?

An organisation has the freedom and flexibility to define its boundaries and may choose to implement an EMS with respect to the entire organisation, or to specific operating units of the organisation.

In setting the scope, the credibility of the EMS will depend upon the choice of organisational boundaries. For example, excluding part of an organisation from the scope of the EMS may attract criticism. The scope of the EMS must also be documented.

Inside view

- There should be careful consideration of the scope of the EMS and its boundaries.
- Are there any existing management systems in place that can be used? What about a gap analysis?
- Should the EMS be integrated with other business or management systems (or will this cause confusion?), or be stand-alone (and therefore incur duplication?)
- Can the EMS be linked with other strategies and initiatives such as Corporate Social Responsibility?

Environmental policy (4.2)

The purpose of the environmental policy is to establish the framework for what has to be achieved before moving into the PDCA cycle of planning, implementation and operation, monitoring and corrective action, and lastly management review. The Policy should:

- Be relevant to the business;
- Contain a commitment to continual improvement, prevention of pollution and to compliance with legal and other relevant requirements;
- Provide a framework for setting and reviewing objectives and targets; and
- Be documented and communicated.

The environmental policy is an auditable document and so statements in the policy should not be misleading (e.g. claims for zero discharges, environmentally friendly products, etc.). It is important that the policy is credible.

Publicly available - means available on request, not necessarily active distribution. The fact that the policy is publicly available need not be stated in the policy itself. Note that the policy has to be communicated to those "working for and on behalf of the organisation".

Employees should not be expected to recite the policy verbatim, but they should be able to demonstrate an understanding of how the policy is reflected in their work and of how they contribute to meeting the policy.

On paper, most environmental policies meet the requirements of ISO 14001. An area of failing, however, relates to the fact that the policy must be "appropriate to the nature and scale and environmental impacts" of the organisation.   Some policies do not fully reflect this and a useful exercise is to substitute an organisation's name with that of "Joe's Burger Bar". If the applicability and sentiment of the policy does not alter, then you must question whether the policy is relevant to the organisation and its environmental impacts (unless the organisation is a burger bar!). It is important that everyone can relate to the policy and that it provides an identity for the organisation.

Inside view

- Be original – don't just copy another company's policy!
- Make sure the policy matches reality and this could

help to get buy in from employees.

PLANNING

Environmental aspects (4.3.1)

A procedure is required to identify the environmental aspects of the organisation's activities, products and services within the scope of the EMS that it can control and those that it can influence. Impacts associated with planned or new developments, or new or modified activities, products and services must also be considered. From this identification process, a business should determine those aspects which result in or have the potential to result in significant impacts on the environment. The significant impacts must be taken into account when implementing the EMS and this information has to be kept up to date.

Plan

Aspect/impact identification and the determination of significance is the cornerstone of the EMS, as significant impacts must be managed.
All aspects and the associated impacts must be identified in order to determine if they are significant.   The types of aspects and impacts to be considered include those identified in ISO14001 Appendix A. This is useful guidance and some common areas requiring improvement are those associated with past land use (e.g. the presence of potentially contaminated land), future planned developments, as well as direct and indirect impacts (i.e. those which can be controlled and those which can be influenced such as suppliers and contractors). Environmental impacts should also be identified for normal, abnormal (e.g. maintenance) and emergency situations.

The organisation should then determine the significance of each impact based on a declared procedure (criteria). There is no single recommended or accepted method for identifying and evaluating the significance of aspects and impacts. It is up to the organisation to decide which method to use, but the method must be sound and justifiable. The criteria can include elements influencing impacts such as quantity, toxicity of substances, sensitivity of receptors etc. Consideration

of legal requirements can also be a useful "filter" of significance.   Any aspect evaluation mechanism which is flawed will result in a flawed EMS because the wrong things will be managed.

The output from the aspect and impact identification process should be some form of record that can be reviewed and up-dated. Many companies produce an "environmental risk register" but the organisation is free to choose any format. It should be noted that there could be other inputs to this process including previous environmental reviews, technical studies and information prepared as part of any submissions to regulatory authorities.

The model below shows how the aspect/impact evaluation feeds into other elements of the EMS. Once the significant aspects/impacts have been identified it will be possible to:

- Create an environmental policy that relates to significant aspects/impacts;
- Set objectives and targets to maintain and/or reduce impacts;
- Determine where operational controls need to be concentrated to manage risks;
- Determine the control procedures required;
- Determine where specific training is required; and
- Help assure compliance with relevant legislation.
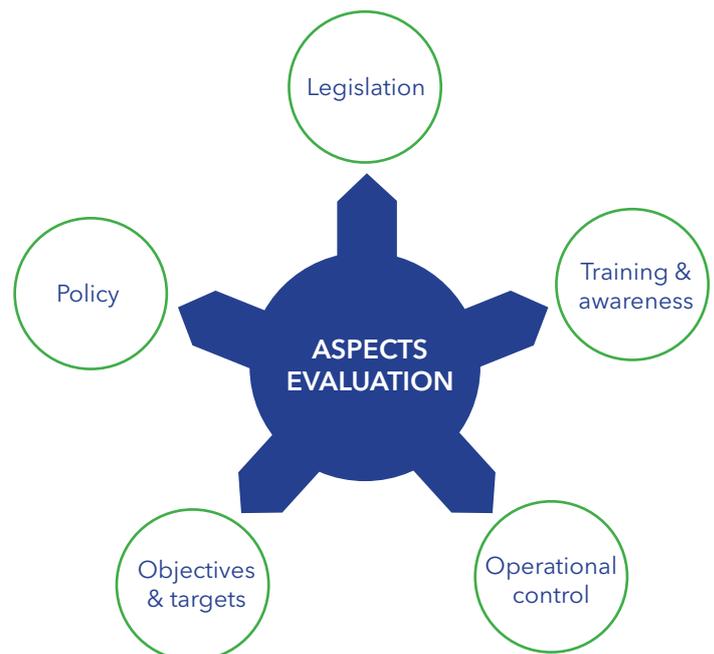
Inside view

- Spend time deciding on the approach to identifying aspects and impacts. Should it be done on a site basis, process basis, media basis (air, water, waste etc.) or combinations?
- Decide how it will be presented – tables, matrices, text based report etc.
- Ensure that the aspects and impacts are identified (i.e. the cause-effect linkages so for example energy use has potential downstream impacts of climate change).
- Common areas that are missed include the evaluation as to whether the organisation owns or operates on potentially contaminated land (past impacts), and so-called indirect impacts associated with products in use, key impacts through the supply chain and "knowledge based impacts" through the provision of environmental advice (e.g. environmental consultancy).
- Remember that the "environmental setting of your business is important – are you near sensitive receptors such as water courses, local residents, designated landscapes?   Also if you are producing a multi-site EMS, then the local setting of each site should be clearly understood.
- There should be a clear and easy to understand method of determining significant impacts.
- Most organisations use some form of scoring system; but they can tie themselves in knots! A "reasoned description" is perfectly acceptable – this impact is significant because we use lots of it, there are legal obligations to follow and it is implicated in climate change.
- If you use a "risk assessment" based scoring system, it is recommended that you follow health and safety principles and do the initial risk assessment assuming no controls in place (i.e. at face value). You could then work out the residual risk after you applied controls.
- All organisations will have their own significant (or "most important") impacts.
- Legislation is often a good default to making an impact significant.
- All significant impacts must be managed and this can be via investigations (to gain complete information), objectives and targets to improve performance or "operational control" to keep the issue under control.

Plan

Legal and other requirements (4.3.2)

A sound methodology for gathering information on legislation is essential. Legislation can cover discharges to air, land and water and "nuisance" considerations as well as other factors related to the operation e.g. packaging, emergencies, waste management, energy management etc.

Decisions on how this applies to the organisation can be made on the basis of the industrial processes used, the industry sector and with the assistance of regulatory authorities. It is important to ensure that there is effective communication of legislative requirements (e.g. licence conditions) to those who need to know.

"Other requirements" can include codes of practice to which the organisation may subscribe, for example: Approved Codes of Practice (ACOPS), industry programmes (e.g. the Chemical Industries Association's Responsible Care programme) or voluntary agreements. It can also mean corporate or group policies that apply to an individual site.

In essence certification is seeking to ensure that:
- There is a robust process for identifying legal and other requirements and for deciding whether they are applicable or not;
- Key requirements are communicated to those that need to know; and
- There are periodic reviews to capture changes.

The organisation should have some means to prove that they have identified applicable compliance requirements. This could be some form of "register".

Inside view

- There are many sources of legislation that can be trawled and gleaned from the internet.
- It is recommended that once a piece of legislation is identified as being applicable that some form of supporting notes are made explaining why and how it applies to the business.

Objectives, targets and programme (s) (4.3.3)

Objectives and targets must be documented and be consistent with the policy and the identified significant environmental aspects and legal requirements. Employees responsible for achieving objectives and targets should have been involved in their development so as to ensure understanding and reality.

Objectives and targets must be "SMART", and revised where necessary:

Specific
Measurable
Achievable
Relevant
Time-bound

Programmes must include the designation of responsibility, the means of achievement and the timeframes by which they are to be achieved. In essence, this equates to whom, how and by when? Particular emphasis should be given to clearly defining the means of achieving each programme with consideration given to the setting of milestones and the use of project plans. If appropriate, some form of "normalisation" can be used (e.g. per tonne of product, per unit area, per person etc.).

Objectives and targets must ideally be focussed on improving environmental performance, but other objectives are acceptable. Examples of improvements can include:
- Environmental performance (e.g. quantified reductions);
- Environmental control (e.g. improved training resulting in greater control);
- Knowledge and information (e.g. investigations to gain greater technical understanding before committing to investment).

Some organisations set objectives and targets that reflect compliance with legislation. Whilst this is not prohibited by the standard, the organisation should

aim to demonstrate continual improvement in actual performance. Certification will be seeking to evaluate whether the objectives and targets an organisation has set itself are "demanding yet achievable".

Inside view

- Linking environmental objectives and targets to wider business objectives can be beneficial and gain further buy-in.
- A typical life-cycle could be investigate and gain sound data, set a quantified target and then keep under control.
- Some form of project planning is important to help ensure effective management and tracking. Sound project management principles should be applied.

IMPLEMENTATION AND OPERATION

Resources, roles, responsibilities and authority (4.4.1)

For effective implementation, an organisation must have the capabilities and support mechanisms necessary to achieve its environmental policy, objectives and targets, and manage its significant impacts. Individuals must be aware of the scope, responsibility and authority of their functions, and understand their freedom and authority and the channels to be used to initiate action.   "Resources" include personnel, equipment and financial resources.

Environment related responsibilities and authorities should be defined, documented and communicated. There should also be a defined management representative. Management representatives are not necessarily employees of the organisation, and are not required to be part of the management team, but their responsibilities and authorities should be defined and documented.

The organisation shall document roles, responsibilities and authorities. This can be done through organisational charts and/or work process diagrams/

procedures and job descriptions.

Inside view

- Ensure that there are documented responsibilities for those managing significant impacts.
- An area of risk is where there are "potential single points of failure" (i.e. an individual wins the lottery and leaves their current role!).

Competence, training and awareness (4.4.2)

Training is the communication of information, theories and principles in order to create competence and awareness. The range of tools available for training is vast. Techniques can range from simple management briefings through to university education. The appropriate level of training for the job should be determined through the identification of training needs. The standard does not restrict this to training needs identification of its own staff, as contractors and temporary employees (i.e. those working on behalf of the organisation) may require consideration based on their probability of impacting the environment.

Awareness is the product of training and contributes to competence. Competence should be ascertained by various means (e.g. testing, interview, qualifications, etc.).

Competence is the ability and aptitude required (gained by awareness and experience) in order to perform a function satisfactorily. This is a critical clause of the standard in higher risk environmental sectors (e.g. chemical manufacture), and processes will be required in order to provide assurance that individuals are demonstrably competent.

Obviously there is no need to provide training to or create awareness for those job holders who are already competent. In such cases, all that is required is continuing professional development and appraisal. Remember that training may be needed for both direct and indirect impacts. For example, the purchasing department may need considerable information on the upstream environmental impacts of the materials they buy.

All personnel should have been made aware of the organisation's policy, key impacts, objectives and the EMS. This does not have to be through formal training sessions and other channels could be used such as; notice boards, newsletters, intranet pages, e-mails etc.

A record of the training received is required to be retained and available for review and audit. Where the competence of personnel and contractors performing tasks associated with significant environmental impacts is hinged on appropriate education and/or experience, records of education and/or experience should be available.

Inside view

- For environmentally complex businesses the demonstration of competence is a key point to be able to demonstrate.
- For all organisations it should be ensured that EMS awareness is embedded in the induction process and that there are mechanisms (e.g. appraisals) to identify any potential future training needs.

Communication (4.4.3)

Top management must ensure that an effective communication process is in place. There should be mechanisms in place to ensure effective communication of:
- The policy
- Objectives, targets and programmes
- Operational control methods and criteria
- Audit results and findings

There should be a process for:
- effective internal communication
- receiving, documenting and responding to communication from external parties
- a recorded decision on whether the organisation is

going to communicate externally on its significant environmental aspects (i.e. what is the disclosure policy?)

The organisation is required to maintain a record of all "relevant" external communications received from interested parties on environmental issues. As a minimum this should include complaints about environmental performance, communications from the regulators and / or emergency services. Records should include the responses given by the organisation and be maintained as proof of communication which could include meeting minutes, newsletters, posters etc.

Inside view

- A strategy of "little and often" may be more beneficial for environmental issues.
- Ensure that there are key lines of communication with interested parties (e.g. regulators).
- Have a clear information disclosure policy.

Documentation (4.4.4)

This requirement highlights what system documentation should be in place, the purpose of which is to ensure that the organisation's EMS is cohesive and that all interactions are understood.

Are there documents that describe:
- How the EMS works, its core elements and how they interact?
- The system scope?
- Where to find the relevant information – provide direction to information?

Documentation must provide direction to users so that they can access further documents as required for their job. This "sign-posting" requirement is important and is often overlooked. EMS documentation can be integrated with existing quality and safety documentation.

It is not a requirement in the ISO 14001 standard to prepare a "manual", but "best practice" is to document the EMS in a manner that is clearly understood, repeatable and effective.
The EMS should only be as comprehensive as is needed; it does not need to regurgitate the standard, but should be more of a "link" or "signpost" document showing how the organisation manages its environmental affairs and addresses the requirements of the standard.

Inside view

- The key is to ensure that there is effective "signposting" or provision of direction to related documentation. The EMS "manual" could become a cross-referencing guide.

Control of documents (4.4.5)

The organisation must have a process for developing, distributing, controlling and maintaining EMS documentation.

There should be a procedure or process to ensure that EMS documentation
(e.g. policies, procedures, plans) are:
- identifiable, reviewed, authorised and revised as necessary;
- include responsibility for creation/revision;
- of the current revision at the operating location;
- removed if obsolete or otherwise marked to show status; and
- legible, dated, well ordered and retained for a specific period.

This clause of ISO 14001 is the same as in ISO 9001 and so if you already have ISO 9001 certification, then there is no need to duplicate procedures.

Inside view

- Electronic control is easier than paper!
- Ensure that people approving procedures are

competent to do so.

Operational control (4.4.6)

The ultimate purpose of operational control is to ensure that all operations associated with the identified significant impacts, applicable regulations, policy and objectives are controlled.

It should be noted that documented procedures are not always necessary, perhaps because of effective training, a high degree of competence or the simplicity of operations. For contracted situations, most effort should be directed at those which present the greatest risk to the organisation's management of significant aspects.

- Are operations relative to significant aspects, policy and objectives/targets planned and controlled?
- Does this include maintenance activities?
- Are there documented procedures where needed (e.g. a balance between competence and the need for documented procedures)?
- Have operating criteria (or auditable practices or tolerances) been established?
- Have procedures been communicated to relevant suppliers and contractors?

Ideally, the organisation should be able to demonstrate which employees and contractors are competent to undertake critical tasks.

The following list is a typical example of documented Operational Control Procedures that a chemical manufacturing company considered appropriate:

ENV/01 Liquid Effluent Monitoring
ENV/02 Control of Plant Effluent
ENV/03 Emptying Bunds and Containment Areas
ENV/04 Reporting Requirements
ENV/05 Chemical Spill Response
ENV/06 Critical Environmental Equipment List
ENV/07 Waste Disposal Site Monitoring ENV/08 Waste Disposal
ENV/09 Bulk Chemical Delivery
ENV/10 Chemical Storage
ENV/11 Bag Filter Plant Control

In addition to these, other related controls included: Laboratory Procedures and Calibration Manual; Plant Operating Procedures Manual;
Procurement Manual;
Planned Preventive Maintenance Data Base; and Emergency Response Plans.

Inside view

- Remember there is a balance between competence and documentation – if 100% competent then documented procedures may not be needed; but this should be balanced against risk and consequences.
- Try to ensure that there are clear criteria in any procedures (e.g. numeric levels, tolerances, clearly defined acceptance levels etc.).

Emergency preparedness and response (4.4.7)

This clause should be recognised as having several dimensions. The first is a procedure to identify potential for accidents and emergency situations that can have impacts on the environment. This can be done as part of the aspects and impacts identification (Clause 4.3.1). Another method could be to conduct a risk assessment as a separate exercise. The drawback is that the skill in identifying "emergency situations" may be weak and some environmental emergencies can be unobtrusive and undetected. Nevertheless a systematic and well applied methodology should be effective.

Secondly, an organisation has to have procedures for responding to the events, which is sometimes incorporated into an emergency plan. Many responses, however, are usually built into established work instructions and an "emergency plan" may only address a small fraction of the emergency situations.

The third requirement is for preventing and mitigating the environmental impacts that may arise. Prevention may range from equipment design, staff competence, emergency response equipment and established

documented procedures, right through to installation of abatement equipment.

Mitigation occurs after the accident has occurred. For example, a response to a spillage usually includes absorbent materials, mobile bunding, drain blanks and valving etc.

Having established the response procedures, these have to be reviewed and revised periodically. Although it is not compulsory, ISO 14001 makes the point that it is useful to do this after an accident has occurred. There should also be periodic tests of the emergency procedures "where practicable".

Inside view

- Often the EMS will only need to "signpost" to the current emergency plans. Sometimes, however, businesses have not thought through the potential environmental consequences of its emergency scenarios.

CHECKING

Monitoring and measurement (4.5.1)

Monitoring is continuous assessment of performance over time. Monitoring would normally be based on measurement capability (e.g. meters, gauges, etc.). The essence is to monitor and measure key "environmental characteristics" – or significant impacts. This will vary between organisations and can also be defined in legislation.

This is a critical area of the standard and is unlikely to be restricted to monitoring required for legal compliance and could include monitoring resource use. Monitoring procedures must also include the documenting of information to monitor performance and conformance with objectives and targets.

Procedures should include how monitoring will be done, the frequency, criteria and the records that will be maintained. Calibration is also required of environment

critical instruments.

The monitoring regime is highly dependent on the nature and scale of the organisation and can vary widely in complexity. To give some examples, the following parameters would be typically measured by an oil production platform.

Parameter	Means
Air Emissions (Flare)	Metering, gas analysis, calculation
Air Emissions (Turbines)	Metering, gas analysis
Air Emissions (Vent)	Calculation, gas analysis
Air Emissions (Fugitives)	Calculation
Produced Water	Metered
Oil in Water	Laboratory analysis
Solid Waste	Measurement on-shore or off-shore
Production Chemicals	Stock control
Chemical Discharge	Estimated by calculation
Spills	Number, estimated volume

The following parameters may be measured by an office based organisation:

Parameter	Means
General Waste	Skip loads, weights
Recycled Waste	Skip loads, weights
Electricity	Metering, invoices
Gas	Metering, invoices
Water	Metering, invoices
Mileage	Submitted mileage claims
Carbon Dioxide	Calculated from mileage data/ energy data
Provision of Environmental Advice	Number of information packs distributed
Paper Use	Reams of paper used from purchasing

Inside view

- Clearly describing the sources of data and how they are calculated is a recommended step (anyone

involved in regulations such as the CRC Energy Efficiency Scheme, Packing Waste Regulations and EU Emissions Trading Scheme will understand this!).

- Even in mature EMS's this is an area that is a common source of nonconformities.
- Ensure that critical monitoring and measuring devices are calibrated.   Be mindful that some devices could be "for indication only" and may not require formal calibration.
- Internal audits should also cover data and data assurance processes.
- Consider developing some Environmental Performance Indicators.The new version of ISO 14001 is likely to include this as well.

Evaluation of compliance (4.5.2)

Check

The organisation will need to demonstrate how it evaluates compliance with applicable legal and other requirements. Most organisations fulfil this clause via their internal audit processes, but other compliance audits, checks and reviews can be used.
The organisation should define its processes for evaluating compliance with legal and other requirements and must keep records of these evaluations.   This area is commonly misunderstood – it is not the identification of legal requirements that is being questioned here. It is the assurance processes that are in place to be able to demonstrate that the applicable legal requirements are being complied with by the business. As stated this is usually completed through some form of internal audit process.

Inside view

- This is probably the most commonly misinterpreted part of ISO 14001. This is not about the identification of legal requirements, but the assurance processes that can demonstrate that a business complies with them. For example, the Duty of Care Regulations 1991 applies to just about every UK business and so this part of ISO 14001 is seeking you to demonstrate that you have undertaken steps to assure compliance. In this case it could involve site tours to ensure effective segregation and containment of waste, effective identification,

application of the waste hierarchy, ensuring that waste carriers are "Registered" with the Environment Agency / Scottish Environmental Protection Agency and the maintenance of accurate Duty of Care Waste Transfer Notes for at least two years.
- Competency is obviously important in those that are undertaking the evaluations of compliance.

Nonconformity, corrective action and preventive action (4.5.3)

This section of the standard addresses that which is done, used or put in place in order to re-apply control, whenever checking reveals that control is not meeting the acceptance criteria.

Nonconformity
The organisation must control any noncomformity – rectify the immediate
problem and mitigate the impacts.

Corrective action
They must also identify the cause of the problem and take action to avoid repetition – corrective action.

Preventive action
There also needs to be a mechanism for identifying and eliminating potential problems – preventive action.

Corrective and preventive action should be
commensurate with the impacts encountered and responsibilities must be defined. The organisation must seek to resolve root causes, rather than just treating symptoms. Changes as a result of action taken must be reflected in procedures.

Records of nonconformities and corrective and preventive actions must be maintained. Records should include:

- Description of actual or potential nonconformities (i.e. an accident/incident reporting form).
- Causes of nonconformities.
- The actions taken to eliminate the causes of actual and potential nonconformities.
- Any procedural changes implemented and documented as a result of nonconformities.

Inside view

- If your business does not have an electronic

action tracking system, try tracking all audit/inspection findings on a central register / spreadsheet.

Control of records (4.5.4)

Records must be legible, identifiable and traceable to the activity, product or service involved. They must be readily retrievable and protected against damage, deterioration or loss.

Records should identify their expected retention time. They must be available for review to demonstrate conformance to the standard and consideration must be given to records retained for legal purposes. The annex A.5.4 to ISO 14001 gives examples of records that may be required.

Environmental records may include:
- Information relating to compliance with legislation and regulations;
- Training;
- Complaints regarding environmental performance;
- Non-conformance reports and corrective actions;
- Results of process monitoring;
- Records of environment critical maintenance activities;
- Internal audits; and
- Management reviews.

Inside view

- Ensure that there is a good understanding of "critical" records such as those required for legal purposes. There may also be legal record retention times.
- Some organisations develop a matrix of critical records defining what, where, how and who is responsible for their maintenance.

Internal audit (4.5.5)

An audit programme must be developed and cover the entire EMS. The purpose of the internal audit is to ensure compliance with planned arrangements and identify opportunities for improvement.

Some questions to answer are:
- Are internal audits planned and do they cover the whole EMS within a defined audit cycle?
- Is there conformance with planned arrangements and ISO 14001?
- Is the audit programme based on the environmental importance of the activity – significant impacts and the results of the previous audits? Many organisations are now using the principles of risk based auditing;
- Do internal audit procedures cover: audit scope? Frequency? Methodology? Responsibility? Auditor requirements? How to report findings?
- Is the internal audit process going to be used to evaluate compliance with legal and other requirements (Clause 4.5.2)

EMS audits should concentrate on operations that have greater potential environmental impacts, for example, the in-house effluent treatment plant may need to be audited more often than the warehouse. The audit programme should, therefore, be proportional to the significant environmental impacts. It should also consider where objectives and targets have been set and the results of previous audits.

The organisation should consider which audit methods should be used and audit reports should be able to demonstrate a good logical audit trail. Audits should not be a glorified inspection. Auditors must have knowledge of environmental issues and pertinent legislation and system auditing skills. They should also be as "independent" as possible.

Inside view

Try "risk based" auditing. For example, pick a key theme (e.g. waste management) and audit the topic interfacing with ISO 14001 along the audit trail. Many organisations still try and conduct internal audits along a "clause based approach" – it does not always yield the best results.

- It is recommended that your internal audit programme includes at least an annual audit on the

EMS documentation – this can be used to give it a good "spring-clean".

- A mixture of audit styles can be useful – try not to repeat the same old audit trails each time. Look for new angles and approaches. Doing internal audits can be quite tough – and there is a risk of "staleness" as the auditors think they know what happens.
- If you are a multi-site organisation try using auditors from other sites to conduct audits. It can help to share information on best practice.
- If you are thinking of a multi-site certification then there must be centrally planned and co- ordinated internal audits. The idea being that corrective actions on one site could be applicable elsewhere.
- Consideration has to be given to auditor competence – particularly in highly technical areas or when dealing with legal requirements.

Management Review (4.6)

The purpose of a management review is to evaluate the effectiveness of the EMS and its ability to achieve the desired results.   It should be a top level critical review of the EMS and conducted at sufficient intervals (at least annually).

All relevant and pertinent information must be provided to make the review meaningful.   Appropriate levels of management must be involved in the review and follow up - again to make it meaningful and to ensure that necessary actions are implemented.

The management review should be a critical assessment of the performance of the EMS by top management. It is not compulsory for the review to be conducted at one meeting, as is commonly believed and indeed the format does not have to be conducted as a conventional meeting (e.g. comprehensive information can be prepared, for management to then critically review the performance of the EMS remotely).

Some points for consideration include:
- Do top management review the EMS at pre-defined intervals?
- Is the EMS suitable and effective?
- Is all the necessary information provided to enable a meaningful review?
- Are there records of the review?
- Are all necessary managers attending / inputting to the management review process?
- Does the management review address the need to change policy, objectives or procedures in light of: audit findings (internal and external)? Communications from interested parties including environmental complaints?
- Does it review the environmental performance of the organisation and continual improvement?

Review the status of corrective and preventive actions? Evaluate any changing circumstances (e.g. new technology or new developments)? Consider changing legislation? Review follow-up actions from previous management reviews and define any new recommendations?

Inside view

- The EMS has to have management commitment if continual improvement is to be realised.
- Optimally if the EMS can be incorporated into a wider business management strategy then it is more likely to be successful.

DNV GL - Business Assurance

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