INTEGRATING GREEN INTO AN EXISTING MANAGEMENT SYSTEM: PEFORMING A 'GREEN' GAP ANALYSIS

Mary McDonald
President/Principal
Individual Solution Options/Quality Services, Inc. (ISO/QS, Inc.)
www.isoqsinc.com
isoqsinc@aol.com
512/282-0181

KEYWORDS:
integration, ISO14001, implementation

SUMMARY:

In an effort to meet requirements for quality, environmental, and safety management standards in a practical manner, many companies are pursuing the integration of their management systems. Integrating a 'green' system into an existing management system where it makes sense is often both practical and cost effective.

This paper will briefly list those elements of a management system that have been proven to be most practical to integrate as well as those that are more difficult to integrate. The paper will then focus on implementing an environmental ('green') gap analysis as the basis for developing an integration strategy for an environmental management system, taking the easily integrated elements into account.

INTRODUCTION:

When deciding to implement a new environmental management system into a pre-existing management system, the first questions often are: What do we have and what do we need? How difficult will this be? Who should do this? What does our output look like?

This paper will present techniques for performing a 'green' gap analysis. The aim of performing a 'green' gap analysis is to
- identify key areas of focus while preventing duplication of efforts;
- identify what works well now and should be continued;
- what needs to be done (and hopefully, laying out who will do it, and by when),

resulting in a preliminary implementation plan.

DISCUSSION:

Many companies have some sort of management system in place to run their day-to-day business. This system may be off-the-shelf/store-bought, custom designed, modified from an earlier system, or home grown. It may be based on quality, occupational health, safety, or a melange of previous initiatives. Although this paper is not overly concerned with the type of management system being modified, the author does recognize that a variety of management systems may be improved through the addition of an environmental management system. The author also recognizes that environmental management system may work well within several types of existing management systems.

The decision to augment an existing management system with environmental component may also come from several different sources. The sources may include
- direction from senior management,
- pressure from customers,
- requirements for compliance with laws, regulations, or statutes, or
- from the local community or other activists.

Some companies may also be implementing an environmental management system as the result of a court order (part of a noncompliance agreement, for example).

Regardless of the reason, studies have shown that it makes good sense from an **economic** standpoint to include an environmental component in your management system. The financial, goodwill, and environmental benefits that can be obtained from sound environmental management quickly point out the wisdom of adding this system to the existing one(s).

When determining the areas for integration, one should start with the elements that are most easily integrated into an existing system. Since many companies are considering (or in the process of) integrating ISO 14001:1996, and are already registered to ISO 9001:1994, ISO 9001:2000, TL 9000 second edition, QS9000 Third Edition, or TS 6949 (either version), we will use these standards for the purpose of illustration for this paper. In addition, since ISO 9001:2000 is more closely related to ISO 14001:1996 than the other standards, and many companies will be upgrading their systems from the older standards to the newer ones, ISO 9001:2000 will be used for purposes of discussion. [At time of submission, ISO/TS 16949:2002 was due to be released, but still unavailable for comparison].

The elements of a Quality Management System (QMS) that are the easiest to integrate include the following:
- Document Control
- Control of Records
- Management Review
- Internal Audits
- Training
- Design Control
- Corrective/Preventive Action
- Calibration
- Purchasing

The rationale behind selecting these particular elements stems from the commonality of the standards. Although there are other elements where effective cases can be made for integration, these 9 are the most typical ones selected for integration. The elements of Document Control, Control of Records, Management Review, Internal Audits, , Corrective/Preventive Action, Calibration, and Training have very similar requirements. These can be assessed rather quickly to determine what is being done right, and what can be added in to make the system more compatible with both standards. Design Control may be a bit less easy to understand, but stem back to the requirements to design a product that not only works from a customer perspective, but also considers environmental aspects when doing material selection, packaging, disposability after use, etc. Purchasing takes into account the operational controls called out in ISO 14001:1996.

MECHANISM FOR PERFORMING A 'GREEN' GAP ANALYSIS:
One of the best ways to determine your system's compatibility with Environmental Management System (EMS) is to perform a 'green' gap analysis to the EMS requirements. This green gap analysis is typically used to identify areas where environmental conformance is already being done, as well as identify areas that require additional efforts in order to conform to the standard. The most widely recognized environmental standard is the ISO14001:1996 standard. This environmental standard has been adopted worldwide and include several components that are compatible to, and aligned with, other international standards including the quality management standards described above, as well as the Occupational Health and Safety Assessment Specification OHSAS 18001:1999. For purposes of this discussion, environmental integration will focus on integration of an ISO 14001:1996 system into an ISO 9001:2000 system.

What do we have and what do we need?
Integration of an environmental system with an existing management system will obviously highlight the areas where additional environmental controls, documentation, and training is necessary; what may be less obvious is the additional requirements placed on existing systems that may be necessary. For example,

- documentation and records control will need to be augmented/expanded to include environmental

452

requirements;
- management review will need to include environmental concerns when looking at overall health of the business, which will require more time to perform the review thoroughly;
- business planning will need to take environmental requests into account as part of their review cycle; and
- internal audits and corrective/preventive actions must now also include environmental concerns and corrective actions as part of the system.

So how difficult is it to do a 'green' gap analysis?

The technique itself is not overly difficult. However, the analysis and the resulting implementation plan should be done allowing sufficient time to do a thorough and complete review of all aspects of the requirements. This time is needed to ensure that the assessor does not overlook a critical step in the process, a key interaction involving two or more aspects, and to ensure that the organization takes appropriate credit for areas where your facility is already doing much of the work.

Who should do this?

Some companies have asked employees in the areas to do the gap analysis, thinking that the people who know the process best are the ones to assess the area most fully. Although this works well in some cases, in reality, some (but certainly not all) of these companies have discovered that their employees know the process so well that they inadvertently skip a step or operation. To avoid making this error, it may make sense to assign employees from another area of the facility (who may not be as familiar with the process, but have a general idea of what the process entails) to initially document the inputs, processes, and outputs. These employees often bring a fresh set of eyes to the process under scrutiny, and also identify other benefits (such as process improvement opportunities) while performing this analysis. (By the same token, they may miss a detail that the experienced employee would not overlook). The results are then reviewed by those most familiar with the process, as well as those folks who are unfamiliar with the process but are not afraid to ask questions, to ensure that no critical steps have been missed. The key here is to have folks who are both *very* familiar with the process, and *less* familiar with the process, review the analyses.

When performing the analysis, the implementers must assure that they have examined each area for compatibility and completeness, taking local 'corporate' culture into account. For example,

- Has management review been examined for possible inclusion of environmental concerns? Is the review better handled separately for now until a system can be implemented, or is the system able to handle an addition/integration? Do the executives have enough time to review the integrated system in sufficient detail to conform to the requirements of the standards? Should it be broken down into smaller sections, reviewed more frequently? What makes sense from a systems standpoint? From a scheduling standpoint?
- Who is going to do the internal audits? Is it going to be a quality (Q) or Occupational Health and Safety (OHS) auditor who is 'tucking in' the environmental requirements? Does the organization already have environmental (E) auditors, who are familiar with compliance auditing? Can they be trained to perform systems audits? Are they the 'right' ones to do the audit? Would a team approach work better? How will these integrated areas be handled?
- What training will these auditors need in order to conduct a full audit? When and how can that training be obtained? If not expedient, is there an environmental professional who is aware of the current standard and can determine relevance into the existing system? Does this make the internal audits too long/complex?
- What type/amount/level of training will be provided for employees? Are they to be broken down to smaller groups (management/supervisors/exempt/nonexempt) or done in an all-hands meeting? What is appropriate for your organization?

The discussion on auditor competency is too complex to be covered in this paper[1], but deserves serious consideration to ensure that the 'right' person or people are assigned to complete the environmental audit.

One of the benefits of performing the green gap analysis is identifying (and taking credit for) areas where there are positive environmental impacts. Positive environmental impacts may be as simple as recycling paper and aluminum cans to minimize trash disposal volumes/costs, or as complex as overhauling chemical selection and usage over the next several years to comply with proposed future environmental requirements and regulations or to lower air emissions. Whatever the impact is, if it's positive, remember to note it down!

TECHNIQUES FOR PERFORMING A 'GREEN' GAP ANALYSIS:
There are several viable techniques for performing a green gap analysis. This paper will discuss a technique that is often used – the analysis by parts.

Analysis by parts consists of breaking down the standard into areas that are elements or sub-elements of the standard, perhaps using a checklist or the ISO 14004 document as guidance, and analyzing where your system complies, and where your system needs additional focus.

The analysis should include notation of areas where there is full conformance to the standard already; partial conformance to the standards (with comments on what is in place and what needs to be added); and areas where there is nothing in place at this time.

This analysis can then be used to pull together an implementation plan. The implementation plan should include sufficient detail to assure that the project is on schedule, and that there are individuals assigned for each action item, including dates for status and completion.

One of the keys to performing a successful green gap analysis is to understand what the ISO 14001 standard is asking. Someone reading the 14001 standard for the first time probably will not appreciate the subtleties of the standard; in addition, the linkages between the various elements (policy, objectives and targets, aspect/impact identification, etc.) may not be obvious in the first passthrough.

As a result, a recommendation may be to do increase the assessor's knowledge (and probability of doing a more complete/thorough job) through
- further research,
- by obtaining further training, or
- by getting expert help on understanding the standard and performing the initial gap analysis if you are not an expert in the standard (hire a consultant).

If you are very familiar with the standard, but do not consider yourself an expert, you may want to consider using a tool, such as a checklist, for aid in determining degree of conformity. When selecting a checklist, determine the answers to some key questions:

- What kinds of questions are being asked? Open ended or yes/no? Are they detailed enough to be used by many different levels of trained employees (not only for beginners, or not only for experts?)
- Does it include areas for noting positive impacts?
- Does it include areas for noting negative (work to be done) areas?
- Does it provide any further information on how to assess ISO 14001?
- Does it provide questions for integration, and show how these questions apply to existing systems?

A sample of an integrated questionnaire[1] is shown below.

QMS	EMS	Element/Standard	Objective Evidence	CAR# if Applicable
X	X	**Management Responsibilities: Policy, Objectives and Targets, Plans and Programs ISO 9001, Element 5.1; ISO 9001, Element 5.3; ISO 14001, Element 4.2**		
		1. Review the policy or policies and determine its' (their) conformance to the requirements of the standard(s). Ensure the following commitments are present:		
X	X	a. Suitable to the organization and the magnitude of the qulaity, environmental and/or OH&S issues.		
	X	b. Commitment to comply with relevant legal, regulatory, and other requirements.		
	X	c. Commitment to prevention of pollution.		
X	X	d. Commitment to continual improvement.		
X		e. Commitment to meet quality objectives.		
X		f. Commitment to comply with the requirements of the management system.		
X	X	g. Must be documented.		
X	X	h. Must be communicated to all employees.		
	X	i. Must be available to the public.		
X	X	j. Must establish a framework for setting and reviewing objectives.		
X		k. Must be understood by employees.		

Figure 1.1 – Integration checklist example

This checklist can be used as is with very minor modifications to perform your gap analysis. By simply changing the title of the last column to "work to be done", you can derive a listing that notes level of conformance, areas to be worked on, responsible parties to complete this work, and dates for implementation.

QMS	EMS	Element/Standard	Objective Evidence +/-	Work to be done
X	X	**Management Responsibilities: Policy, Objectives and Targets, Plans and Programs ISO 9001, Element 5.1; ISO 9001, Element 5.3; ISO 14001, Element 4.2**		
		1. Review the policy or policies and determine its' (their) conformance to the requirements of the standard(s). Ensure the following commitments are present:		
X	X	a. Suitable to the organization and the magnitude of the quality and environmental issues.		
	X	b. Commitment to comply with relevant legal, regulatory, and other requirements.		
	X	c. Commitment to prevention of pollution.		
X	X	d. Commitment to continual improvement.		
X		e. Commitment to meet quality objectives.		
X		f. Commitment to comply with the requirements of the management system.		
X	X	g. Must be documented.		
X	X	h. Must be communicated to all employees.		
	X	i. Must be available to the public.		
X	X	j. Must establish a framework for setting and reviewing objectives.		
X		k. Must be understood by employees.		

Figure 2. Modified checklist (titles changed to conform to requirements of green gap analysis)

Once the auditors have been trained (or you have selected a consultant), the green gap analysis should be performed to determine compatibility of the present system with a 'green' system. The results should be tabulated and presented to management for their buy-in and support, in order to start building a cooperative effort early.

The results of the gap analysis may then look something like this:

456

QMS	EMS	Element/Standard	Objective Evidence +/-	Work to be done
X	X	**Management Responsibilities: Policy, Objectives and Targets, Plans and Programs ISO 9001, Element 5.1; ISO 9001, Element 5.3; ISO 14001, Element 4.2**		
		1. Review the policy or policies and determine its (their) conformance to the requirements of the standard(s). Ensure the following commitments are present:	Conforms to Q; needs addition of E	B. Dawson to modify policy by 8/15.
X	X	a. Suitable to the organization and the magnitude of the quality and environmental issues.	Conforms to Q; needs addition of E	B. Dawson to modify policy by 8/15.
	X	b. Commitment to comply with relevant legal, regulatory, and other requirements.	not in place	B. Dawson to modify policy by 8/15.
	X	c. Commitment to prevention of pollution.	not in place	B. Dawson to modify policy by 8/15.
X	X	d. Commitment to continual improvement.	OK	OK
X		e. Commitment to meet quality objectives.	OK	OK
X		f. Commitment to comply with the requirements of the management system.	OK	OK
X	X	g. Must be documented.	Conforms to Q; needs addition of E	B. Dawson to modify policy by 8/15.
X	X	h. Must be communicated to all employees.	Conforms to Q; needs addition of E	C. Farren to provide training by 9/30.
	X	i. Must be available to the public.	Conforms to Q; needs addition of E	B. Dawson to modify policy by 8/15.
X	X	j. Must establish a framework for setting and reviewing objectives.	Conforms to Q; needs addition of E	B. Dawson to modify policy by 8/15.
X		k. Must be understood by employees.	OK	OK

Figure 3. Completed checklist with responsibilities defined.

THE GREEN GAP ANALYSIS HAS BEEN PERFORMED; NOW WHAT?

If you are analyzing the results of the green gap analysis, you now need to figure out what your next steps are. The author recommends that you (in order of importance/criticality):

- Comply with all levels of regulations (local, county, state, and national) for all types of permits/requirements, including stormwater, air, etc.);
- Ensure that there is adequate management buy-in to implement the additional program;
- Identify all areas that do not conform to ISO 14001:1996, including calibration of gauges, thermometers, meters, and other instruments that monitor significant environmental aspects. Assign action items to bring these items into conformance and assign due dates for completion of these items.
- Identify internal auditor candidates and set up training for them.
- Roll out training on the new system to all employee groups.

What does our output look like?

The output will be some sort of implementation plan. It may be graphic, done in a project tracking software or by hand; it may be an action list with timeline associated; or another version. But the output of a 'green' gap analysis should be a plan that allows you to achieve your objective (ISO 14001 registration).

Once the plan has been document, assure that you have buy-in, both from management and from those assigned to complete the various action items. If you do not have buy-in, you will need to do some negotiation (to get the buy-in) or re-evaluation (to determine if this goal of ISO 14001 registration is supported by the organization, and achievable without 100% buy-in). When you do have buy-in, continue implementation.

Next, check to assure that you are in compliance or are planning to come into compliance shortly, that you have management support, including for training of environmental auditors, and that you have identified areas to work on. Finally, before rolling out this plan, pause for a moment and perform a sanity check. Will there be any interested parties (employees, management, stakeholders, shareholders, neighbors, external citizen action groups, etc.) that will object to your plans? If so, what can be done to mitigate these objections? Planning upfront can often mitigate any objections later on.

If your sanity check 'checks out', you are ready to proceed with implementation of your system. Good luck!

REFERENCES:

1. "Auditor Competency for Combined QMS/EMS Audits", Mary McDonald and Terry Mors, ASQ 9000/ 14000 Integration Conference 2002 proceedings.

2. Integrating Quality, Environmental, Safety and Health Systems, by Mary McDonald, Terry Mors, Ann Phillips, and Eddie Phillips. Government Institutes, 2001.