

ISO 14001 Colloquium IV Report

How can ISO 14001 be improved in its next incarnation?

Kananaskis, Alberta
March 10-12, 2010

Colloquium sponsored by:

Auditing Association of Canada
Devro Consulting
EnAble Performance
SLMcLeod Consulting
University of Alberta

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Executive Summary

A colloquium on ISO 14001 was held March 10-12, 2010 in Kananaskis, Alberta. The theme of the colloquium was “How can ISO 14001 be improved in its next incarnation?” Twenty-two people from a wide variety of sectors participated in the colloquium. The discussions included a combination of plenary and small group discussions and were lead by two professional facilitators. The suggested changes were organized around seven key areas: (1) definitions, (2) purpose, (3) environmental policy, (4) public reporting, (5) monitoring and measurement, (6) management review, and (7) other changes. A summary of the key changes suggested is provided in the table below. It is important to acknowledge that consensus was not obtained, nor sought, around every suggestion. Many of these changes were heavily debated at the colloquium.

SUMMARY OF KEY POINTS FROM THE COLLOQUIUM
<p>Definitions</p> <ul style="list-style-type: none">• Consider harmonizing the definitions in the ISO 9000 and 14000 series of standards.• Add definitions for “suitability”, “adequacy”, and “effectiveness”.
<p>Purpose of the Environmental Management System (EMS)</p> <ul style="list-style-type: none">• Consider adding a requirement for the organization to explicitly identify the purpose of its EMS.
<p>Environmental Policy</p> <ul style="list-style-type: none">• Update section 4.2b to “includes a commitment to continual improvement of <i>environmental performance</i>¹ and prevention of pollution”.
<p>Public Reporting</p> <ul style="list-style-type: none">• Replace the last paragraph of section 4.4.3 with an explicit requirement for external reporting. This could read “The organization shall establish and implement a method(s) for external communication of environmental performance”.
<p>Monitoring and Measurement</p> <ul style="list-style-type: none">• Update the first sentence of clause 4.5.1 to “The organization shall establish implement and maintain a procedure(s) to monitor and measure the <i>significant environmental aspects, objectives, targets, and environmental performance</i> of its operations that can have a significant environmental impact”.
<p>Management Review</p> <ul style="list-style-type: none">• Update section 4.6 to require management focus on environmental performance and external reporting.• Numerous revisions to the wording were suggested to reflect the above changes.
<p>Other Changes</p> <ul style="list-style-type: none">• Consider integrating the annex with the requirements in the ISO 14001 standard.• Define the term “competence”.• Consider adding a point in section A5.1 of the annex asking organizations to <i>consider</i> the use of both leading and lagging indicators.• Update the third paragraph of clause 4.4.2 to read “The organization shall establish, implement and maintain a procedure(s) to make persons <i>with the potential to cause a significant environmental impact</i> working for it or on its behalf aware of”.

The colloquium was a part of a series of four events that have occurred since 2002. The next colloquium will be held in approximately two years. The colloquium was sponsored by the Auditing Association of Canada, Devro Consulting, EnAble Performance, SLMcLeod Consulting, and the University of Alberta.

¹Note: Italics denote words added to the current version of the standard. Strikethrough text denotes words deleted from the standard.

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1 Introduction

1.1 Background

ISO 14001 is an international standard that specifies the minimum requirements for an environmental management system. The overall aim of the standard is “to support environmental protection and prevention of pollution in balance with socio-economic needs”². Originally released in 1996, the standard was updated in 2004. As of December 31, 2008, at least 188,815 certificates had been issued in 155 countries worldwide certifying verified compliance with the standard³. In Canada, at least 1,388 organizations have been registered to ISO 14001 (ISO, 2009).

ISO 14001 has been the subject of considerable debate in both the popular and academic literature. For example, a variety of views have been offered on its impacts, costs, benefits, and key implementation challenges. To explore the relevance of those, and other issues, to Canadian organizations, a series of colloquia were held in 2002, 2005, and 2008. The broad short-term objectives of these colloquia have focused on improvements to ISO 14001 practice, identification of strengths, weaknesses, and gaps in the standard, and identification of areas for future research. The broad long-term objectives have included improvements to the ISO 14001 standard, improvements in the effectiveness and efficiency of meeting the standard, and ultimately, improvements in environmental protection.

1.2 Colloquium IV

Colloquium IV was held March 10-12, 2010 in Kananaskis, Alberta. The colloquium was organized by a committee of three consultants, three university professors, and a research associate. The theme of Colloquium IV was “How can ISO 14001 be improved in its next incarnation?” This topic is timely, as the standard is up for review in the near future. Twenty-two people participated in the colloquium. Sectors represented included academic institutions, auditors, consultants, electric utilities, mining, municipal government, registrars, and water. Participation in the colloquium was by invitation only.

It was recognized that the limited time available for the colloquium would not be sufficient to examine in detail each element of the ISO 14001 standard. Participants were therefore asked to provide a written answer to the question “What one or two parts of the ISO 14001 standard are currently in most need of improvement and why?” in advance of the colloquium. The responses were used to develop a focused agenda organized around the following topics:

- Management review and linked elements.
- Improving environmental performance.
- Various issues.
- Implications of the suggested changes to the audit function.

At the colloquium, two professional facilitators led the participants through plenary discussions around each of these topic areas. To further develop key recommendations on specific improvements to ISO 14001, small group discussions with 3-4 members per group were also held. The results of the small group discussions were shared and debated with all participants in a plenary session. The main points from all discussions were captured by recorders.

² Source: International Organization for Standardization (ISO), 2004, *Environmental management systems – requirements with guidance for use*, International Organization for Standardization, Geneva

³ Source: International Organization for Standardization (ISO), 2009, *The ISO Survey – 2008*, International Organization for Standardization, Geneva

1.3 Organization of the Report

The purpose of this report is to concisely present the key findings of the colloquium. The discussions centred on changes to six key areas of the standard. The next section of the report is organized around those changes suggested to:

- Definitions.
- Purpose.
- Environmental policy.
- Public reporting.
- Monitoring and measurement.
- Management review.

Other suggested changes are also briefly noted. For each suggested change, the rationale for the changes, the benefits of the changes, the non-benefits of the changes, and the implications for auditing are briefly discussed. The report concludes with a summary of thoughts on the next colloquium. It is anticipated that the findings will be of interest to practitioners and academics in environmental, quality and other standardized management systems standards.

1.4 Key Cautions

It is important to acknowledge that consensus was not obtained, nor sought, around every key issue in the plenary and small group discussions. The key messages emerged from the sessions as frequently stated views, but there was not always enough time to explore any dissent that might exist. Moreover, the discussions did not focus on identifying every possible change to ISO 14001. The focus was on the areas where the participants saw the biggest opportunities for improvement.

2 Changes Suggested to ISO 14001

2.1 Changes Suggested to Definitions

The participants highlighted the need to clarify the definitions of some of the key terms used in the ISO 14001 standard. The discussions can be broadly classified into general and specific recommendations.

In terms of the general recommendations, the participants suggested that the definitions used in the ISO 9000 and ISO 14000 series of standards should be harmonized. For example, as a participant highlighted, “effectiveness” is defined in the ISO 9000 vocabulary, but not ISO 14000. The primary benefit of harmonizing the definitions is that it would provide a common reference point, particularly for organizations that have implemented both management system standards. The primary non-benefit is that a large number of terms could necessitate creation of a stand-alone document. In such a case, there is a risk that not all people using the standards would refer to the common definitions document.

In terms of specific recommendations, the participants felt that explicit definitions for the terms “suitability”, “adequacy”, and “effectiveness” should be added to the standard. As the participants noted, these terms appear in multiple locations in the standard. For example, the word “effective” or “effectiveness” appears in clause 4.4.1, 4.4.4, 4.5.3 and 4.6, “suitable” or “suitability” appears in 4.4.5 and 4.6, and “adequacy” appears in 4.6. However, all of these terms are currently undefined. This can lead to different interpretations of what is required. The benefits of adding the definitions would therefore include providing clarity to the meaning of the words and ensuring a consistent application of the phrase “Top management shall review the organization’s environmental management system, at planned intervals, to ensure its continuing suitability, adequacy, and effectiveness.” One potential non-benefit is that adding explicit definitions could remove flexibility in terms of application. The participants highlighted two places where the definitions could potentially be added: Section 3 (Terms and Definitions) and Section A.6 in the Annex (Management Review). The suggested wording for the changes is provided in Table 1. It should be noted that although all participants agreed there was a need for these terms to be defined, there were slight differences of opinion on how this should be done.

TABLE 1 – WORDING FOR SUGGESTED CHANGES TO DEFINITIONS

Suggested Wording – ISO 14001 Section 3 – Terms and Definitions⁴:

- Suitability: the extent to which the EMS is relevant to the organization’s intended purpose.
- Adequacy: the extent to which the EMS is sufficient to meet the specifications of ISO 14001 and the organization’s requirements.
- Effectiveness⁵: extent to which planned activities are realized and planned results are achieved.

Suggested Wording – ISO 14001 Annex A.6 – Management Review:

- To determine suitability: Determine whether the EMS is supportive of the organization’s environmental direction, covers the scope of the EMS, fits the organization’s structure and business model, and is accepted by the organization’s management and staff.
- To determine adequacy: Determine whether the environmental risks of the organization are well managed, whether the organization is adapting to changing business needs, and whether the EMS is providing value to the organization.
- To determine effectiveness: Determine how well the EMS facilitates compliance with requirements and leads to continual improvements in environmental management and environmental performance.

⁴ Reference definitions (Source: Merriam-Webster Online Dictionary, <http://www.m-w.com>, Accessed March 12, 2010):

- Adequate: “sufficient for a specific requirement; barely sufficient or satisfactory; lawfully and reasonably sufficient”
- Suitable: “adapted to a use or purpose”
- Effective: “producing a decided, decisive, or desired effect”

⁵ Source: International Organization for Standardization (ISO), 2005, *Quality management system – fundamentals and vocabulary*, International Organization for Standardization, Geneva

Adding definitions for “suitability”, “adequacy”, and “effectiveness” would have consequences for auditing. As noted above, the key benefit of defining the terms is that it should improve understanding among auditors and auditees about what is required by the standard. This could lead to an improvement in audit consistency between organizations.

2.2 Changes Suggested to Purpose

One of the most heavily debated points at the colloquium was whether or not a requirement for an explicit statement of purpose of the EMS should be added to the standard or not. While there is currently a requirement for the organization to document the scope of its EMS, there is no explicit requirement for the purpose to be documented.

Those in favor of adding a purpose statement to the standard noted that it would provide clarification on why the organization was implementing an EMS in the first place. Although the purpose would be strongly linked to the policy and scope statements, the experts emphasized that it is distinct. It would provide a high-level purpose that is above the commitments made in the policy. It was acknowledged that an EMS could have more than one purpose, such as improving environmental performance, managing risks, information transfer, and/or raising awareness, among others. In any case, the participants noted that the purpose should not change much, if at all, from year-to-year.

However, it is important to emphasize that a number of the participants were opposed to adding an explicit purpose statement. The reasons for this varied, but several participants felt that the purpose was already implicitly addressed by the requirement for clear objectives and targets, that some organizations may not be candid on the purpose for their EMS, and that there may be some hesitancy on the part of auditors with such a clause. Rather than putting a requirement for a purpose statement in the standard, some participants noted that this could potentially be added to a guidance section in the annex.

After considerable discussion, it was clear that the participants had mixed views on the necessity of adding an explicit purpose statement to the requirements of ISO 14001. The participants agreed to put forward the notion of adding a purpose statement on the understanding that the differences of opinion would be highlighted. In light of the ongoing debate, the participants did not develop suggested wording for a possible clause requiring an explicit purpose statement in ISO 14001.

It was acknowledged that adding a separate requirement for a purpose statement would have consequences for auditing. In particular, this would imply additional outcomes expected from the EMS. These additional outcomes would need to be examined during internal audits and in the management review process.

2.3 Changes Suggested to Environmental Policy

A key theme of discussion at the colloquium was exploring how the requirement for improved environmental performance could be strengthened in the ISO 14001 standard. The participants noted that improved environmental performance should be one of the key reasons for implementing an ISO 14001 EMS. However, there were mixed views on how the issue of improved environmental performance should be addressed within the standard.

One of the suggestions was that the environmental policy, section 4.2 in the standard, should be updated to highlight the importance of improved environmental performance. The key benefit of updating the environmental policy is that it is a key driver for the entire EMS. No non-benefits were cited to updating the environmental policy in this way. The suggested wording for the change is provided in Table 2.

TABLE 2 – WORDING FOR SUGGESTED CHANGES TO ENVIRONMENTAL POLICY

Suggested Wording – ISO 14001 Section 4.2b – Environmental Policy:

- Includes a commitment to continual improvement of *environmental performance*⁶ and prevention of pollution.

2.4 Changes Suggested to Public Reporting

The possibility of adding a requirement for enhanced public reporting in ISO 14001 was discussed extensively at the colloquium. As the participants explained, ISO 14001 is currently relatively weak in its requirements for external reporting. The participants discussed the benefits and non-benefits of possible changes to clause 4.4.3 on communication.

The key benefit of enhanced public reporting is that it will promote transparency and accountability. The participants noted that enhanced public reporting may help separate organizations with strong environmental performance from those with marginal performance, which would address a key weakness of ISO 14001. However, the participants also recognized that several cautions needed to be kept in mind. In particular, the participants emphasized it was important that the standard not become overly prescriptive. Given that ISO 14001 is an international standard, flexibility is needed to accommodate the fact that different organizations will have different reporting capabilities. Care must be taken to ensure that the reporting requirements are not too onerous for small organizations.

With the benefits and non-benefits noted above in mind, there was consensus on the need for the requirement for external reporting to become mandatory. There were some differences of opinion in terms of the specific requirements. Some experts felt reporting should include, at a minimum, progress against the purpose of the EMS, against objectives and targets, and against challenges to continual improvement. Others felt the organization should have more flexibility in specifying the scope of its external reporting activities. The critical point is to get organizations reporting in the first place. After much debate, the participants agreed on the wording for the suggested changes provided in Table 3.

TABLE 3 – WORDING FOR SUGGESTED CHANGES TO PUBLIC REPORTING

Suggested Wording – ISO 14001 Section 4.4.3 Final Paragraph:

- ~~The organization shall decide whether to communicate externally about its significant environmental aspects, and shall document its decision. If the decision is to communicate, the organization shall establish and implement a method(s) for this external communication.⁷~~
- *The organization shall establish and implement a method(s) for external communication of environmental performance.*

Suggested Wording – ISO 14001 Annex A4.3 – Communication:

- Internal and external communication is to display transparency, accuracy, openness, relevance, and timeliness.

Adding a new requirement for external reporting would have consequences for auditing. These consequences would be much the same as those associated with a purpose statement. A requirement for external reporting would imply additional outcomes expected from the EMS. These additional outcomes would need to be examined during internal audits and in the management review process.

⁶ Note: Italics denote words added to the current version of the standard.

⁷ Note: Italics denote words added to the current version of the standard. Strikethrough text denotes words deleted from the standard.

2.5 Changes Suggested to Monitoring and Measurement

One of the key topics discussed around the topic of improved environmental performance was the need for changes to clause 4.5.1 on monitoring and measurement. Consensus quickly emerged around the need to clarify the meaning of the terms “key characteristics” and to underline the importance of environmental performance in this section. The participants all agreed that these changes would make the clause easier to understand and improve the ease of auditing the clause. No non-benefits of the change were cited. The suggested wording for the change is provided in Table 4. Note that the suggested wording for “key characteristics” was drawn from Section A5.1 of the Annex.

TABLE 4 – WORDING FOR SUGGESTED CHANGES TO MONITORING AND MEASUREMENT

Suggested Wording – ISO 14001 Section 4.5.1 First Sentence, First Paragraph – Monitoring and Measurement:

- The organization shall establish implement and maintain a procedure(s) to monitor and measure the *significant environmental aspects, objectives, targets, and environmental performance* of its operations that can have a significant environmental impact.

The changes suggested in Table 4 would have several consequences for auditing. They would provide more clarity on what an auditor should expect to find with respect to the system, particularly as it relates to objectives, targets, and programmes.

2.6 Changes Suggested to Management Review

Clause 4.6 on management review was the subject of considerable discussion at the colloquium. As previously discussed in Section 2.1 of the report, the participants believed it was important to clarify the meaning of the “suitability, adequacy, and effectiveness” of the EMS. However, several other potential changes to this clause were discussed, including emphasizing the need for environmental performance, stressing communication, and improving the alignment of ISO 14001 with other international management system standards.

Although there was no consensus on all of the suggested changes to clause 4.6, the participants focused on incorporating the evaluation and improvement of environmental performance. The rationale for this effort was that feedback in the current management review clause is not appropriately focused on meaningful environmental performance improvement. Instead, it is currently focused on the process of meeting ISO-defined input and outputs as reflected in EMS procedures and requirements. With that in mind, the participants agreed that there is a need to address stakeholder skepticism about the ability of ISO 14001 to generate meaningful environmental performance improvement. The suggested changes to clause 4.6 on management review are summarized in Table 5. The participants also noted that guidance provided in the annex should be updated to include a discussion of how leading practitioners have structured their management review, and the tools / analyses that are used to provide inputs to evaluate 1) environmental performance and 2) suitability, adequacy and effectiveness.

TABLE 5 – WORDING FOR SUGGESTED CHANGES TO MANAGEMENT REVIEW

Suggested Wording – ISO 14001 Section 4.6 – Management Review:

Top management shall review the organization's environmental management system, at planned intervals, to *evaluate and* ensure its continuing suitability, adequacy and effectiveness. Reviews shall include assessing opportunities for improvement and the need for changes to the environmental management system, including the environmental policy and environmental objectives and targets. Records of the management reviews shall be retained.

TABLE 5 – WORDING FOR SUGGESTED CHANGES TO MANAGEMENT REVIEW

Input to management reviews shall include⁸:

- a) the environmental performance of the organization,
- b) the extent to which the environmental policy, objectives and targets have been met,
- c) results of internal audits and evaluations of compliance with legal requirements and with other requirements to which the organization subscribes,
- d) communication(s) from external interested parties, including complaints, *and external reporting requirements*,
- e) *the status and effectiveness* of corrective and preventive actions,
- f) follow-up actions from previous management reviews,
- g) changing circumstances, including developments in legal and other requirements related to its environmental aspects, and
- h) recommendations for improvement.

The outputs from management reviews *shall be consistent with the commitment to continual improvement of environmental performance*, and shall include any decisions and actions related to:

- a) *environmental performance*;
- b) ~~possible changes to~~ environmental policy, objectives, targets;
- c) *resources*; and
- d) other elements of the environmental management system, ~~consistent with the commitment to continual improvement~~.

Relevant outputs from the management review shall be made available for communication.

The suggested changes to management review would have several audit consequences. In particular, auditees would be expected to demonstrate they have addressed the new input and output requirements. Depending on the organization, this could require evidence that goes beyond what is currently in place.

2.7 Other Changes Suggested

In addition to the changes suggested in the previous sections, numerous points were raised at the colloquium. A summary of the key points is provided in Table 6.

TABLE 6 – OTHER CHANGES SUGGESTED AT THE COLLOQUIUM

- Consider integrating the annex with the requirements in the ISO 14001 standard.
- Define the term “competence”.
- Consider adding a point in section A5.1 of the annex asking organizations to *consider* the use of both leading and lagging indicators.
- Update the third paragraph of clause 4.4.2 to read “The organization shall establish, implement and maintain a procedure(s) to make persons *with the potential to cause a significant environmental impact* working for it or on its behalf aware of”.

One point that emerged on multiple occasions was the possibility of integrating the annex with the requirements of the ISO 14001 standard, as is the case in the CAN/CSA Z809 standard for sustainable forest management (SFM). The participants noted that this would ease the interpretation of the standard’s requirements. The participants also cautioned, however, that it would be critical to clearly distinguish between the requirements and the guidance.

As Table 6 illustrates, another suggested change was related to the notion of competence. The participants noted that competence is not defined in the ISO 14001 standard, but it is defined in ISO

⁸ Note that the bullet points were re-ordered to increase emphasis on environmental performance.

9000:2005⁹. The participants raised the issue of who needs to be competent, with emphasis focused on the management representative required by clause 4.4.1 and internal auditors. It was noted that contractors could also be considered here. The participants therefore suggested that competence be defined in the ISO 14001 standard, with the management representative and internal auditors being addressed as a note. No suggestions on the specific wording of the definition, beyond that provided by ISO 9000:2005, were provided.

The importance of proactive vs. reactive measurement was also discussed at the colloquium. The participants noted that it was important to have both and that this was reflected in the development of leading and lagging indicators. The participants suggested that material should be added to the guidance section in the annex to underscore this point. Although specific wording was not developed, the participants felt the organization should be asked to *consider* the use of both leading and lagging indicators section A5.1 of the annex.

In discussions centered on contractors and vendor management, the participants noted that clause 4.4.2 on competence, training and awareness can cause issues. It was noted that large organizations in particular may have many contractors working on their behalf and many of these contractors may not have any meaningful effect on the organization's environmental aspects and impacts. The participants therefore suggested that the third paragraph of clause 4.4.2 be updated as indicated in Table 6.

The issue of compliance was discussed multiple times throughout the colloquium. It was noted that one of the key points of ISO 14001 is that it emphasizes the need for compliance. That said, it was also recognized that registration to ISO 14001 does not guarantee compliance. As one participant noted, compliance may be viewed as "table stakes" in the developed world, but may not be as much of a given in developing nations. The notion of auditing in accordance with CAN/CSA Z773 for environmental compliance auditing was briefly raised. However, the participants noted that other methods, such as gap analysis, inspection, walkabouts, checklists, observations, or reviews, could be used to demonstrate compliance. It was also recognized that compliance is not the same as environmental performance or quality. No changes to the standard related to compliance were agreed upon at the colloquium. The need for improved environmental performance was one of the key focus areas of the colloquium and changes related to that topic were presented earlier in the report.

Beyond the suggested changes noted above, several other points were emphasized at the colloquium. For example, the importance of continual improvement was raised several times. The participants discussed the fact that continual improvement needs to be related to a baseline. The notion of cumulative environmental impacts was discussed, but no changes were suggested to the standard on this topic. Another key theme was the need to consider the impact of any changes on small- and medium-sized enterprises (SMEs). The participants noted that in SMEs many requirements, such as management review, may be done informally. Related points were raised regularly when discussing the need to avoid making the ISO 14001 standard overly prescriptive. The participants also recognized that, although their suggestions come from a Canadian perspective, there is a need for them to resonate internationally. Other issues, such as linking ISO 14001 with sustainability models (such as the Natural Step), the importance of addressing risks, the relevance of ISO 14031, and whether or not the scope of the EMS should be shared publicly and were all discussed, but no changes to the standard were suggested.

⁹Competence is defined as "demonstrated ability to apply knowledge and skills". Source: International Organization for Standardization (ISO), 2005, *Quality management system – fundamentals and vocabulary*, International Organization for Standardization, Geneva

3 Comments on the Next Colloquium

At the end of the colloquium, a brief plenary discussion was held to reflect on what the participants liked and what they disliked about the colloquium. The key comments are presented in Table 7.

TABLE 7 – FEEDBACK ON THE COLLOQUIUM

What the Participants Liked About the Colloquium

- The questionnaire distributed prior to the colloquium.
- The focus on the topics of concern.
- The smaller group of people.
- The good representation around the table.
- The location (isolated, beautiful).
- The benefit of passing the findings along to the Canadian Advisory Committee on ISO 14001.
- The food.
- The energy and the candor.
- Eating together (adds to the discussion and the networking).
- The facilitation.
- The opportunities for learning.
- Exposure to new ideas.
- Hearing from high-level performers.
- The practical focus.
- The plenary sessions with everyone together.
- Small group work on key topics.
- Networking.

What the Participants Disliked About the Colloquium

- The location (too far from an airport).
- More representation from SMEs is needed.
- More industry representatives are needed.
- More NGO representatives are needed.
- Timing should not be so close to the March break.
- A template is needed for the small group work.
- Short on time at the end – we may want to look at cutting down on the topics a bit.

It was noted that the next colloquium will be held in Southern Ontario in approximately two years. The final location has not yet been decided, but will take into account the feedback received on the likes and dislikes about Colloquium IV.

4 Further Information

For further information on the colloquium, interested parties are encouraged to contact any member of the organizing committee:

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