

*A Report by a Panel of the*

**NATIONAL ACADEMY OF  
PUBLIC ADMINISTRATION**

*for the U.S. Environmental Protection Agency*

**May 2001**

**THIRD-PARTY AUDITING OF  
ENVIRONMENTAL MANAGEMENT SYSTEMS:  
U.S. REGISTRATION PRACTICES FOR ISO 14001**



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The views expressed in this document are those of the Panel alone. They do not necessarily reflect the views of the Academy as an institution.

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## FOREWORD

The use of third-party auditing of business practices has a long history, in settings as diverse as ship inspection, public accounting of financial statements, environmental compliance auditing, due-diligence auditing of potential environmental liabilities by banks and insurance companies, auditing of quality management systems, and others. Recently it also has come into use for environmental management systems (EMSs), under the ISO 14001 international voluntary standard which was promulgated in 1996. Over 1,100 registrations to ISO 14001 have been issued to organizations in the U.S. already, including some government agencies and enterprises as well as businesses, and over 18,000 worldwide.

The use of third-party auditing and conformity registration for environmental management systems represents an important new development for government and the public as well as for businesses and for the auditing industry itself. While many other forms of auditing are primarily business-to-business services, EMS auditing – like financial auditing – also has important public policy implications. It provides a public certification that the approved organization has demonstrated a commitment to regulatory compliance, to prevention of pollution, and to continual improvement. It is available for use by public agencies and enterprises as well as to private businesses, and some are using it. And it is also being used increasingly by federal and state environmental agencies as a criterion for public policy benefits, such as favorable public recognition and regulatory flexibility.

Given these public policy implications, it is important that government agencies and the public, as well as businesses themselves, understand clearly how the ISO 14001 system works, what it was intended to do and how it functions in practice, and who the professionals are who are actually operating this system. As a public certification procedure, it is important that it produce credible and consistent results and that all who rely on it, both businesses and the public, have appropriate expectations of what it represents.

This report provides a timely description and assessment of the ISO 14001 accreditation, registration and auditing system, and highlights both its development to date and a number of important unresolved issues of interpretation of the standard and consistency of practice that deserve further attention. It also offers recommendations particularly to the National Accreditation Program which is the chief guardian of the integrity of this process, and to other participants in it.

The Academy hopes that this report will be of use to all who are interested in ISO 14001 and in third-party auditing more generally, and particularly to federal and state agencies, to the public, to the ISO 14001 community itself, and to organizations that may consider such auditing and registration. We are grateful for the financial support of the U.S. Environmental Protection Agency for this study, as well as the generosity of all those interviewed who so generously contributed their time and perspectives to the study, and the diligent work of all the Panel members and Academy staff who helped to conduct it.

David Garrison  
Vice President

## LIST OF ACRONYMS

<b>Academy</b>	National Academy of Public Administration
<b>AICPA</b>	American Institute of Certified Public Accountants
<b>ANSI</b>	American National Standards Institute
<b>ASQ</b>	American Society for Quality
<b>ASTM</b>	American Society for Testing and Materials
<b>CASCO</b>	ISO Committee on Conformity Assessment
<b>CPAs</b>	Certified Public Accountants
<b>DNV</b>	Det Norske Veritas
<b>ELP</b>	Environmental Leadership Program
<b>EMS</b>	Environmental Management Systems
<b>EPA</b>	U.S. Environmental Protection Agency
<b>GAAP</b>	Generally Accepted Accounting Principles
<b>GAAS</b>	Generally Accepted Auditing Standards
<b>IAF</b>	International Accreditation Forum Inc.
<b>ISO</b>	International Organization for Standardization
<b>NAP</b>	National Accreditation Program
<b>NIST</b>	National Institute of Standards and Technology
<b>PDCA</b>	Plan-Do-Check-Act
<b>Project XL</b>	EPA's pilot program for excellence and Leadership
<b>QMS</b>	Quality Management System
<b>RAB</b>	Registrar Accreditation Board
<b>SAGE</b>	Strategic Advisory Group on the Environment
<b>SEC</b>	U.S. Securities and Exchange Commission
<b>TC</b>	ISO 14001 Technical Committee
<b>TC 207</b>	Technical Committee 207
<b>TRI</b>	Toxic Release Inventory
<b>U.S. TAG</b>	U.S. Technical Advisory Group
<b>VCA</b>	Vehicle Certification Agency

## EXECUTIVE SUMMARY

Public and private sector environmental leaders are moving increasingly from a reactive management mode in which they respond to pollution control laws and regulations towards a proactive mode in which they use systems to manage their environmental impacts more effectively and efficiently. In doing so, many businesses and some public agencies have begun to seek third-party validation of their overall environmental management systems (EMSs). Unlike ad hoc efforts to reduce pollution emissions, EMSs are formalized sets of management procedures and measurement tools to improve an organization's environmental performance.

In the past, an EMS was as unique as the company or agency that adopted it. In recent years, however, several industry-based and international harmonization efforts have been launched to make EMSs more uniform. The most widely adopted example to date has been the ISO 14000 series of international voluntary environmental management standards issued by the International Organization for Standardization (ISO). ISO 14001 requires organizations seeking registration to conform to a series of detailed procedural and documentation requirements to commit to continual improvement of EMSs, to comply with applicable laws and regulations, and to work toward prevention of pollution.

ISO 14001 provides participating organizations the option of using independent, third-party registrars to verify that their EMSs conform to the ISO 14001 standard and lead to improvement over time. This report focuses on how the third-party registration system is unfolding in the United States and what challenges it may face in the future.

The Panel concludes that the ISO 14001 accreditation, registration and auditing systems are developing well at this early stage. The concept appears to be sound, and registration has grown to more than 1,100 organizations with an accelerating trend underway. The systems appear to be keeping up with this growth without becoming overwhelmed or suffering a decline in quality. Further, most registered organizations contacted for this study are satisfied with the results. They report that third-party registration and auditing have enhanced their management practices and business effectiveness. Certification is not merely an expensive paper exercise to satisfy external demands. These early results offer promise for continued development.

At the same time, there remain unresolved issues, such as variations in interpretation and professional norms. These deserve attention and improvement. Maintaining and enhancing credibility is another key concern as the registration system expands and evolves. Currently, third-party registration and auditing of EMSs are subject to conflicting and, in some cases, inappropriate expectations on the part of businesses, government agencies, environmental groups, the public, and sometimes even members of the registration and auditing community.

This report serves two purposes. The first is to educate policymakers, government agencies, the public, and organizations considering adoption of ISO 14001 about the procedures, practices, realistic expectations, and potential policy implications of ISO 14001 registration and auditing. The second is to assist the ISO 14001 accreditation, registration, and auditing community in evaluating the registration system and improving its credibility as it continues to grow and evolve.

The recommendations offered in this report are directed toward several audiences. These include:

- The EMS Council, the American National Standards Institute (ANSI), the Registrar Accreditation Board (RAB), ANSI-RAB's joint National Accreditation Program (ANSI-RAB), and the various technical advisory and conformity assessment bodies that revise and develop guidance documents for the ISO 14001 standard.
- The professional/business community of registrars and auditors, particularly those practicing in the United States, as well as those operating worldwide and their emerging professional organizations.
- Organizations considering pursuing ISO 14001 registration and auditing services, the sectoral and trade associations of such organizations, private businesses, and public enterprises and agencies.
- Federal and state environmental policymakers, including environmental and other agencies and state legislators.
- The interested public, particularly environmental groups and other non-governmental organizations (NGOs).

## **PANEL RECOMMENDATIONS**

### **❖ ISO 14001 Must Be Placed in Proper Perspective**

- Third-party EMS registration and auditing are subject to conflicting and, in some cases, inappropriate expectations on the part of businesses, government agencies, environmental groups, the public, and sometimes even members of the registration and auditing community.
  - Some environmental regulators consider third-party certification and EMS auditing to be privatized regulation, substituting for compliance monitoring and inspection to a degree in some facilities.
  - Some environmental groups perceive third-party certification and EMS auditing, at worst, as a business-controlled -- and therefore not credible -- substitute for compliance verification. At best, some see it as another environmental cop or unannounced inspector to catch facilities that violate regulatory requirements.
  - Some businesses envision EMS certification as justification for regulatory or public recognition benefits, while others prefer that it remain a strictly voluntary, by-business-for-business framework for management improvement.

- Given such conflicting and, in some cases, inappropriate expectations, it is most imperative that all interested parties understand how EMS auditing is similar to, and distinct from, other forms of environmental auditing, other types of auditing in general, and public policies designed to provide public recognition or other regulatory benefits.

#### ❖ **EMS Audits Must Be Distinguished from Other Forms of Auditing**

- The ISO 14001 accreditation, registration, and auditing community, as well as government agencies and the public, should carefully consider the similarities and differences between EMS and financial auditing. In particular:
  - Private firms perform both EMS audits and financial audits, but a public agency -- the Securities and Exchange Commission (SEC) -- oversees the standards for financial auditing practices. A detailed public report of financial performance measures accompanies financial audit findings; but ISO 14001 only requires public disclosure of a firm's environmental policy statement, not data on its environmental performance or key EMS information.
  - Financial auditing firms are liable for the consequences of inadequate audits.
  - Both financial auditors and financial consultants are certified.
  - Financial auditing firms are subject to a peer review process designed to ensure uniformity of professional auditing standards.
- As ISO 14001 auditing continues to evolve, ANSI-RAB and the EMS auditing and registration community should seriously consider developing a peer review system similar to the one that accounting firms use to maintain uniform professional norms of interpretation and practice. In addition, ANSI-RAB should consider requiring certifications for EMS auditors and EMS consultants similar to Certified Public Accountants (CPAs) for financial auditing.
- As the ISO 14001 registration and auditing system continues to develop, it could benefit from careful consideration of the experience of financial auditing and CPA certification, giving due consideration to important similarities and differences between these fields. This is particularly appropriate in areas of common concern such as legal liability, confidentiality, auditor independence, and managing conflicts of interest.

#### ❖ **EMS Auditing vs. Compliance Auditing**

- A third-party EMS audit is not a compliance audit. Yet if properly conducted, an EMS audit can provide verifiable evidence that an effective compliance-management system is in place to prevent non-compliance, to detect and correct non-compliance situations promptly, and to prevent recurrences. Conversely, a compliance audit normally would

include a systematic inspection of all regulated conditions, technologies and practices, and operational records. This serves to detect any regulatory violations involving emissions, effluents, accidental releases, or the failure to maintain required records related to such conditions. However, it would not necessarily address the development of systems and procedures to prevent recurrences of non-compliance situations.

- ANSI-RAB and government agencies sponsoring EMS-based policy initiatives should collaborate on proper ways to understand the relationships between EMS audits -- including compliance-management system components -- and compliance audits. Such discussions should aim to clarify appropriate expectations of EMS auditors with respect to compliance-related EMS elements and to clarify the public's understanding of the limits of compliance auditing.

#### ❖ **EMS Auditing vs. Public Policies Based on EMSs**

- The ISO 14001 accreditation, registration, and auditing system has strengths, limitations, benefits, and costs irrespective of additional benefits -- regulatory flexibility or official approbation, for instance -- that may be conferred by EMS-based public policy initiatives. These initiatives should be examined and carefully evaluated on their own merits.
- Public policies should take into account the strengths and limitations of both ISO 14001 audits and strict compliance audits. Taken together, they are complementary and can strengthen the overall assurance of environmental compliance while reducing adverse environmental impacts. In fact, ISO 14001 implicitly recognizes this difference by requiring that an organization conduct an internal EMS audit and monitor periodically for compliance.

#### ❖ **ANSI-RAB Must Play a Central Role in the EMS Registration System for the United States**

- ANSI-RAB is the most important entity for ensuring the credibility of the EMS registration system. Its job is to ensure that accredited registrars and certified auditors implement the ISO 14001 system consistently and competently, and that a system is in place to detect and to punish those who register EMSs that fail to conform to ISO 14001.
- ANSI-RAB and other national accreditation bodies must be a strong, vigorous, and positive force for upward harmonization of auditing and registration norms. They also should serve as the principal guardian against devaluation of the credibility of EMS auditing and certification; and they must act fairly but vigorously to correct, sanction, or suspend poorly performing registrars and auditors.

#### ❖ **ANSI-RAB Must Ensure Uniform Implementation of the Standard**

- ANSI-RAB uses a small pool of highly trained accreditation auditors to provide horizontal consistency among registrars, as there currently is no other objective way that it or the registrar community can compare one registrar to another.

- There must be sufficient flexibility in registrars' interpretations of ISO 14001 so that audited EMS systems are useful for both large and small enterprises and for vastly different types of businesses.
  - However, to be more useful and more credible, registrars' interpretations of ISO 14001 should be more uniform. A more formal relationship with the process for Clarification of Intent of the US Technical Advisory Group (U.S. TAG) would be helpful for this purpose.
- ANSI-RAB should consider using the peer review process of financial auditing and accounting firms as a model for promoting more uniform application of standards.

❖ **Close Attention Is Needed to Audit Planning and Bidding Practices**

- Some registrars seek guidance documents specifying how to calculate the number of days needed to undertake an EMS audit. They believe such documents would help to ensure more uniform implementation of ISO 14001 and would prevent undercutting of rigorous professional norms. The Panel believes however that the real issue is whether registrars are conducting audits consistently and at an appropriately high professional standard.
- ANSI-RAB should not develop a formal audit-day guidance document. Attempts to standardize time requirements for audits have inherent deficiencies and raise anti-competitive implications. This is especially true for the extraordinarily wide range of scopes and complexities of operations for EMS registration clients.
- As an alternative to an audit-day guidance, ANSI-RAB should incorporate into its accreditation and surveillance audits close scrutiny of registrars' scoping and bidding processes and effort-allocation criteria. This would help to ensure well-documented justifications for the effort and professional competencies devoted to audits of varied complexity and technicality.
- ANSI-RAB should consider developing more guidance on minimum standards for initial registration auditing, not based solely on audit-days on-site, but also on best practices for pre-audit planning, budgeting, scoping, team composition, and first and second-stage audit visits.

❖ **Auditor Training and Experience Must Be More Uniform**

- Some observers caution, and the results of this study confirm, that the ISO 14012 guidelines for qualifications of environmental auditors leave room for potentially wide variations in the environmental experience of EMS auditors.
- As the registration system continues to evolve, ANSI-RAB should consider strengthening requirements for the environmental experience and education necessary when auditors to conduct an EMS audit.

- ANSI-RAB should consider requiring certification of all EMS auditors to assure that they maintain the highest possible integrity and that they assess conformity to ISO 14001 in a competent and consistent manner.

#### ❖ **The Complaints and Sanction Process Must Be Robust**

- ANSI-RAB reports the numbers of complaints against registrars that it receives. Yet it makes public few details on the specific numbers and nature of total complaints, nor what actions have been taken to investigate and resolve them.
- ANSI-RAB should provide greater assurance that there is an effective procedure to monitor, sanction, and report on all complaints lodged against its accredited registrars and their auditors.
  - There should be public listings and regular updates on the receipt, processing, and disposition of all complaints by numbers and categories, if not by name.
  - ANSI-RAB should explain better to registrars and the public how complaints are received, reviewed, and acted upon.
  - If it has not already done so, ANSI-RAB itself should be certified to ISO 9000, which requires a formal complaint management process.

#### ❖ **Timely and Accurate Registration Data Are Needed**

- Registrars are required to maintain and provide on request lists of clients registered to ISO 14001. This information is routinely provided to one or more commercial reporting services by many, but not all, registrars.
- Such information should be complete, publicly available, and regularly updated to include discontinuance or suspension of registrations.
  - If these steps are not taken, customers, government agencies, and the public may be left with the impression that a facility is conformant when in fact it has not maintained its registration.
- ANSI-RAB should resolve questions about who is responsible for maintaining a central public listing, how it should be paid for, and how registrar participation should be assured.

#### ❖ **ANSI-RAB Guidelines on Confidentiality Are Sound**

- ANSI-RAB recently adopted guidance on the requirement that registrars receive objective evidence of the existence and implementation of a legal compliance evaluation

procedure, compliance review by management, and implementation of identified corrective and preventive actions.

- The Panel endorses this sound guidance. Access to such evidence, as opposed to mere affirmative statements, is essential to any credible EMS audit. There are direct parallels in the financial auditing field, where auditors may also discover evidence of illegal practices and have the right and responsibility to review and report them.
- The Panel recommends that the U.S. TAG to ISO Technical Committee 207 (TC 207) propose similar guidance for adoption worldwide.

#### ❖ **More Guidance on Auditor Independence Is Needed**

- ANSI-RAB has explicit restrictions that accredited registrars may not offer both consulting services and EMS auditing to the same client. Yet a number of the registrars interviewed for this study said auditor independence is a problem. There are parallels in the field of financial auditing, where some auditing firms have been criticized for insufficient separation between their auditing and consulting relationships with client organizations.
- The Panel recommends that the ISO Committee on Conformity Assessment (CASCO), which is charged with developing of ISO Guides 62 and 66, should consider making more explicit the definitions of EMS consulting, the actions that constitute consulting, and the actions that are necessary to ensure the independence of EMS auditors.
- ANSI-RAB should revise and strengthen its guidance on auditor independence.

#### ❖ **More Guidance Is Needed on Auditor Independence During Pre-Assessment Audits**

- Pre-assessment audits represent an important mechanism to prepare for the second-stage registration audit. There is unavoidable risk, however, that such pre-assessment audits could erode the independence of EMS auditors in some cases or even cross the line into consulting services.
- Clear guidance on this issue should be provided and careful attention should be paid during ANSI-RAB's accreditation audits of registrars in order to maintain appropriate practices and auditor independence.

#### ❖ **More Guidance Is Needed on Adding Value during Registration and Surveillance Audits**

- In addition to pre-assessment audits, some registrars and auditors believe that they should add value by communicating with clients about best practices observed elsewhere or by pointing out areas for improvement.

- Others state that the audit process adds sufficient and appropriate value by asking thoughtful and probing questions, examining evidence about potential non-conformance situations, and evaluating the adequacy of the organization's proposed solutions.
  - Still other auditors believe that they should merely approve the minimal conformance of the registration applicant's paper trail for each of the ISO 14001 elements.
  - Some auditors and their client businesses, perhaps the most optimistic of them, see auditing as an ongoing and constructive dialogue between the managers and staff of a business and a knowledgeable third party who acts as a skeptical questioner. In this way, the EMS auditor continually helps to identify and narrow gaps between stated environmental management goals and actual practices.
- ANSI-RAB, U.S. TAG, and CASCO should develop additional guidance on the value and limits to third-party EMS auditing and registration. The guidance should address the appropriate level of feedback for registrars to give to registration applicants on best practices, areas for improvement, and root-cause analysis for correcting and preventing recurrent non-conformances. This should be done without engaging in prohibited consulting relationships or creating conflicts of interest.

❖ **More Attention To Pre-Audit Planning Is Required**

- In its accreditation and subsequent audits of ISO 14001 registrars, ANSI-RAB should assure that registrars' pre-audit planning, scoping, and costing procedures are sufficient to provide a basis for registration decisions, with attention to:
- The amount and type of client information required to prepare a proposed contract/bid and audit plan for registration and auditing services.
  - The preparation time and staff activities needed for audit planning and for determining the number of on-site audit days.
  - The information and criteria used to evaluate the appropriateness of resource requirements for the EMS audit.
  - The information and criteria used to design the audit and to specify appropriate audit team competencies for a particular audit.
  - The information and criteria used to determine auditing needs beyond the specific facility site, such as to verify off-site waste disposal, cross-check material statements involving off-site contractors, and evaluate statements concerning the organization's consideration of external stakeholders' views.
- ANSI-RAB or the registrars' professional trade associations should develop a guidance template for exchanging pre-audit information based on best practices.

## ❖ **Surveillance Audits and Assessments of Continual EMS Improvement Need More Attention**

- According to most of the EMS auditors interviewed for this study, surveillance audits are one of the most important ways to assess continual improvement of an EMS.
- In its accreditation and subsequent audits of ISO 14001 registrars, ANSI-RAB should pay careful attention to registrars' procedures for surveillance audits, especially:
  - The criteria used to design the audits and whether such criteria are adequate to assure continual conformance to ISO 14001.
  - The apparent widespread use of contract auditors, rather than full-time registrar employees, and whether the use of contract auditors has implications for continuity and continual improvement of the EMS from audit to audit.

## ❖ **Auditors Should Document All Judgments That Lead to Findings**

- EMS auditing requires that auditors exercise judgment, both in finding major and minor non-conformances and in making an overall finding as to whether an organization should be registered.
  - Registrars should require auditors to document the basis for all of their findings and the basis for judgments on individual major and minor non-conformances.
  - Auditable documentation also is needed to support an auditor's subsequent overall assessment of an EMS. Such documentation should provide the basis for the recommendation for or against registration.

## ❖ **Registrars and Auditors Should Assure Substantive Conformity to ISO 14001**

- Many U.S. registrars and auditors interpret their responsibility as assuring that clients are meeting their self-selected objectives and targets. Others use a broader interpretation of criteria for determining conformance with ISO 14001.
- ISO 14001 requires that a conforming EMS must have certain specified elements, including commitments to comply with all applicable legal and regulatory requirements, to prevention of pollution, and to continual improvement of an EMS. EMS registrars and auditors should audit an EMS against these requirements, not merely against the audited organization's own goals, objectives, and targets. In short, an auditor must make a reasoned judgment whether an organization is doing what it claims and whether its actions satisfy the requirements of ISO 14001.
- The ISO 14001 standard contains deliberate ambiguity on what constitutes prevention of pollution. Additionally, continual improvement is defined as referring to improving an

organization's EMS, not its environmental performance. These ambiguities create uncertainty about how auditors should apply objective criteria and whether conformity assessments should be conducted uniformly for all organizations that apply for EMS registration.

- Although ANSI-RAB and the U.S. TAG do not have authority to modify ISO 14001, they should call attention to the need for ISO 14001 to define more explicitly and interpret more clearly what constitutes continual EMS improvement and prevention of pollution.
- Future revisions of ISO 14001 should consider such issues as how auditors should determine what pace of continual improvement in an EMS is sufficient to warrant registration.
- In the absence of any change to ISO 14001, auditors should examine whether the audited organization has shown adequate evidence that it has systematically considered reasonable options for prevention of pollution.

#### ❖ **More Detailed Evidence of Third Party Benefits Is Needed**

- Recent EMS requirements by U.S. automakers for their suppliers may stimulate increased use of registration to ISO 14001. So far, however, the growth of third-party registration has been modest. Many U.S. firms are taking a wait-and-see approach to ISO 14001 registration.
- ANSI-RAB and/or registrar trade associations should develop more detailed evidence and examples of the benefits and costs of ISO 14001 certification. They should communicate this information more broadly, both to organizations considering ISO 14001 registration and to those that have not yet considered registration.
- U.S. automakers' requirements that suppliers register their EMSs to ISO 14001 may encourage more organizations, particularly small and medium-sized enterprises, to obtain ISO 14001 certification. However, companies that issue such requirements should consider providing more targeted outreach and assistance than currently offered, particularly to small and medium-sized suppliers.

#### ❖ **Small and Medium-Sized Enterprises, As Well As Public Agencies, Need More Information**

- There remain perceptions, particularly among small and medium-sized enterprises, that the costs of using EMS registrars outweigh the benefits. Further research is needed, and information should be disseminated, about the costs and benefits of third-party registration for small enterprises and publicly owned facilities.
- Private organizations, such as registrar and industry trade associations, as well as government agencies like the U.S. Environmental Protection Agency (EPA) and its

state counterparts, should consider methods to reduce registration costs for small and medium-sized firms. One method could be initiatives to bundle or pool similar small and medium-sized enterprises by facility type, sector, or geographic region.

- The U.S. TAG should more directly involve small and medium-sized enterprises in its deliberations.

#### ❖ **Criteria for Selecting Registrars Should be Strengthened**

- Both public and private organizations begin their search for registrars relatively late in the EMS development process. ANSI-RAB and the registrars' trade association should encourage earlier and more careful selection among potential registrars.
- Consultants often have a far earlier and more important influence on EMS development than registrars or auditors. ANSI-RAB should develop at least a voluntary program for training and certifying EMS consultants.
- ANSI-RAB and the registrars' trade association should consider developing an interview guide for potential registrants to use in selecting registrars and to help them understand more clearly the steps needed prior to third-party registration. This guide should be developed with EMS Council oversight to ensure that it reflects broad input, as well as the experience and peer review of registrars. Such a guide should recognize the diversity among prospective registrants in terms of their size, complexity, and potential environmental impacts.

#### ❖ **Public reporting of environmental and social performance should be considered**

- The U.S. TAG should consider how public reporting of environmental and social performance can be addressed more explicitly as part of the ISO 14001 documentation and certification process. Discussion of these issues should include participants from public interest groups and smaller businesses in order to improve the usefulness of the results.

# CHAPTER ONE

## THE REGISTRATION SYSTEM FOR ISO 14001

### **Introduction**

Environmental leaders in both the public and private sectors are increasingly moving from a reactive management mode in which they respond only to pollution control laws and regulations to a proactive mode in which they use systems to manage their environmental impacts more effectively and efficiently. In many cases, leaders look to independent third parties to bring rigor and discipline to their environmental management practices. For example, international projects designed to reduce greenhouse gas emissions use independent third parties to verify and monitor reductions.

In addition to initiatives aimed at specific pollutants, many businesses and some public agencies have also begun to seek third-party validation of their environmental management systems. Unlike ad hoc efforts to reduce pollution emissions, an EMS is a formalized set of management procedures and measurement tools designed to improve an organization's environmental performance. Drawing upon the quality management concept, EMSs are seen as a way to help firms and other organizations manage their environmental activities more “effectively and intentionally” (Metzenbaum 1999).

In the past, an EMS was as unique as the company or agency that put it in place. In recent years, however, several industry-based and international harmonization efforts have been launched to make EMSs more uniform. The most widely adopted example to date has been the 14000 series of international voluntary environmental management standards issued by the International Organization for Standardization (ISO). The first in this series, ISO 14001, was published in 1996. This standard requires organizations to conform to a series of detailed procedural and documentation requirements; to commit to continual improvement of the EMS; to comply with laws and regulations and other environmental commitments of the organization; and to work toward preventing pollution.

ISO 14001 provides participating organizations the option of using independent third-party registrars to verify that their EMSs conform to the ISO 14001 standard and lead to improvement of the EMS over time. This report focuses on how the third-party registration system is unfolding in the United States and what challenges it can expect to face in the future. Although the report addresses third-party auditing in the United States under ISO 14001, it will be useful to those interested in third-party certification processes worldwide and to environmental managers contemplating the use of independent auditors in other contexts as well.

### Differing Expectations

This report is timely for several reasons. First, the registration practices system has generated high and often divergent expectations about what it is supposed to deliver. Many firms and their registrars view the ISO 14001 standard strictly as by-business-for-business. However, the standard suggests otherwise. According to its introduction, ISO 14001 differs from other standards in the series, such as ISO 9000 for Quality Management Systems (QMS), which primarily was designed to address business customers.

It should be understood...that the application of various elements of the management systems may differ due to different purposes and different interested parties. While quality management systems deal with customer needs, environmental management systems address the needs of a broad range of interested parties and the evolving needs of society for environmental protection (ANSI-RAB 2000).

The perception that ISO 14001 is strictly for business is not universally held. Even within the business community, the perception is changing. A significant number of major firms are requiring their subsidiaries and suppliers to use third parties to register under ISO 14001. Many firms and their ISO 14001 third-party registrars also would like to see government regulatory agencies recognize and reward firms that demonstrate their EMS is performing well.

Several states and U.S. EPA offices have launched initiatives to test ways for EMSs and third-party registration to complement traditional regulatory approaches. Examples include EPA's Star Track and National Performance Track, as well as "green track" programs in Oregon, Wisconsin, and several other states. Other EPA-sponsored or supported programs include a specific requirement for participating facilities to undertake third-party audits rather than rely solely upon facilities' self-declared compliance with ISO 14001. Two examples are the National Bio-solids Partnership's EMS program sponsored by the Office of Water, the Water Environment Federation, and the Association of Metropolitan Sewerage Agencies; and Project XL agreement between EPA's Office of Water and the United Egg Producers. In both cases, a decision was made to include a third-party auditing requirement, including public access to audit results, as a way of enhancing the value of the EMS program. The EPA strongly supported these decisions.

A small but growing number of federal and state regulators see third-party registration as a way to direct scarce public resources toward the most pressing health and environmental risks. If EMSs can assure regulators that entities can effectively manage environmental impacts, agencies can redirect their resources toward other less well-managed facilities that might pose greater hazards. In contrast to businesses and some regulators, non-governmental organizations (NGOs) would like EMSs to generate more public information on corporate environmental performance, and to assure superior performance outcomes. As it is presently written, however, ISO 14001 does not compel companies, registrars, or accreditation bodies to disclose publicly the details of actual environmental performance. Nor does it establish substantive environmental performance standards beyond the three commitments of principle noted above. However, it does require organizations to consider external communication as part of their EMSs and to document their decisions.

In short, ISO 14001 is an environmental *systems* standard, not an environmental *performance* standard. Nonetheless, there is an inherent connection between system effectiveness and the environmental performance outcomes by which one might evaluate such effectiveness. Given these varied expectations, it is not surprising that some public sector entities believe that third-party registration falls short of expectations (Academy 2000), notwithstanding that a growing number of businesses find it useful.

### Expected Growth and Change

There is uncertainty surrounding what ISO 14001 is intended to deliver, leading many U.S. firms to take a wait-and-see attitude about the standard and third-party conformance verification. As of November 2000, 1,130 U.S.-based organizations had been certified under the ISO 14001 standard (Peglau 2000).<sup>1</sup> Japan, Germany, the United Kingdom, and Sweden outrank the United States in total certifications, but there is good reason to predict that this ranking will change. The strongest U.S. advocates for registering EMSs to ISO 14001 include large automobile companies, such as Ford and General Motors. These firms have moved quickly to register their own manufacturing plants and have directed their suppliers to implement EMSs over the next two years. Honda asked its major suppliers to register, and General Motors directed its Tier 1 suppliers to implement EMSs based on the ISO-14001 standard. Ford has gone a step further, requiring its suppliers with manufacturing facilities to attain third-party registration to ISO 14001.<sup>2</sup>

**Table 1-1. ISO 14001 Registrations**

<u>Country</u>	<u>Registration</u>
Japan	4,600
Germany	4,636
UK	2,400
Sweden	1,370
USA	1,130
China	464

Source: Peglau, 2000. Federal Environmental Agency. Berlin, Germany.

Note: Peglau's figures for the US do not correspond directly to those reported by IESU for North America in Figure 1. Moreover, they do not distinguish between individual facilities and companies as a whole. The number, therefore indicates only how many registrations have been performed.

Maintaining and enhancing credibility is a key concern as use of the ISO 14001 standard expands and evolves. Although organizations may adopt ISO 14001 to enhance their environmental management, it is possible that some recalcitrant organizations might use ISO 14001 and other voluntary programs as a smokescreen to obscure average or below-average environmental performance. The integrity of third-party registration system is critical in this context.

<sup>1</sup> This number represents the total number of U.S. registrations issued as of that date. Some registrations may cover multiple facilities of a single company, while others may represent only a single facility – or even an individual operation or process – of larger firms that are not ISO-conformant in the rest of their operations.

<sup>2</sup> *The Environmental Management Report*, Volume 4, Number 10, The McGraw Hill Companies, October 1999.

This report serves two purposes. The first is to educate policymakers, government agencies, the public, and organizations considering ISO 14001 adoption on the expectations and policy implications of ISO 14001 registration and auditing. The second is to assist the ISO 14001 accreditation, registration, and auditing communities in evaluating and improving the system's credibility as it grows and evolves.

### **Organization of this Report and Research Methodology**

This report is divided into seven chapters that describe the structure of the U.S. registration system for ISO 14001. Chapter One provides an overview of EMSs, the ISO 14001 standard, the accreditation bodies, and the registrars. Chapter Two puts EMS auditing in perspective by examining how other forms of auditing and public policies that rely upon third-party auditing have colored expectations of what ISO 14001 is designed to deliver. Chapter Three describes how the National Accreditation Program (NAP) in the United States ensures that registrars apply the ISO 14001 standard appropriately and competently. It also identifies issues that internal and external stakeholders should consider as the system evolves. Chapter Four describes the key components of an EMS audit. Chapter Five illustrates how EMS auditors evaluate whether an organization's EMS conforms to the ISO 14001 standard. Chapter Six describes what eleven client organizations see as the primary costs and benefits of using third parties to register their EMSs. Chapter Seven concludes with a discussion of issues that NAP, registrars, auditors, policymakers, environmental regulatory agencies, and others should consider as the registration practice system matures.

The study's methodology is described in detail in Appendix A. However, it is important to note those system components that are not included in this study. The study focuses on registrars operating in the United States, their auditors, and the national accreditation body governing them. It does not focus in depth on the ISO 14001 standard itself, nor on the U.S. entity that provides technical interpretation of the standard, the U.S. Technical Advisory Group (U.S. TAG). Nor does it focus on registrars and their registration and auditing practices outside the United States. Yet this distinction is somewhat artificial because many registrar firms that operate in the United States operate in multiple nations. Given that the ISO 14001 standard was developed to promote international harmonization, how registrars operate internationally to ensure its uniform application is an important consideration that deserves further study. Within the U.S. system, the only major participants not examined in depth are organizations that train U.S. auditors to evaluate conformance with the standard. This omission was not an oversight but was necessitated by time and resource constraints. As such, it should also be considered an important topic for further study.

The ISO 14001 registration system, like other forms of auditing, is in flux. As a result, this report provides a snapshot of the system at one point in time. One reason the system is evolving is that the ISO 14001 standard and the registration practices industry are very young. Because the standard has existed for only five years, registrars still are adapting to their and their clients' changing business needs. Comparable voluntary standards, such as the chemical industry's Responsible Care initiative, have existed for more than a decade. Yet Responsible Care has only now evolved to a point where academics and other interested observers have sufficiently robust data to evaluate it. Additionally, the ISO 14001 standard, guidance documents, and technical interpretations are not static but under continual refinement and revision.

### ISO 14001 Registration in the United States

Figure 1.1 depicts the ISO 14001 registration system in the United States. This chapter describes that system in depth. The system is composed in part of independent third-party registrar firms that are hired by organizations to register their EMSs.<sup>3</sup> These registrars in turn employ individual EMS auditors to perform pre-registration and subsequent surveillance audits of organizations seeking registration. To be qualified to register an organization's EMS, registrars may seek accreditation from an official national body that is internationally recognized by ISO.

The American National Standards Institute (ANSI) and the Registrar Accreditation Board (RAB) cooperate to administer the National Accreditation Program (NAP) in the United States. They have also created a policy advisory body, the Environmental Management Systems Council (EMS Council) to oversee the NAP. To date, NAP has accredited 27 registrars that perform ISO 14001 registrations in the United States. These registrars are listed in Appendix D. Approximately ten more registrars have applied to NAP for accreditation. Together, the registrars, their auditors, and the accreditation body form the U.S. registration system.

**Figure 1-1. The U.S. Registration System**

<b>American National Standards Institute (ANSI)</b>	<b>Registrar Accreditation Board (RAB)</b>				
	<table border="1"> <tr> <td data-bbox="609 1350 1011 1423"><b>Environmental Management Systems (EMS) Council</b></td> </tr> <tr> <td data-bbox="609 1428 1011 1528"><b>ANSI-RAB National Accreditation Program (NAP) Registrars</b></td> </tr> <tr> <td data-bbox="609 1533 1011 1606"><b>Environmental Management System Auditors</b></td> </tr> <tr> <td data-bbox="609 1610 1011 1675"><b>U.S. ISO 14001 Registered Organizations</b></td> </tr> </table>	<b>Environmental Management Systems (EMS) Council</b>	<b>ANSI-RAB National Accreditation Program (NAP) Registrars</b>	<b>Environmental Management System Auditors</b>	<b>U.S. ISO 14001 Registered Organizations</b>
<b>Environmental Management Systems (EMS) Council</b>					
<b>ANSI-RAB National Accreditation Program (NAP) Registrars</b>					
<b>Environmental Management System Auditors</b>					
<b>U.S. ISO 14001 Registered Organizations</b>					

<sup>3</sup> The terms "certification" and "registration" are nearly synonymous in common usage, but differ slightly in the context of the ISO EMS standard. The Registrar Accreditation Board (RAB) defines registration and certification differently than ISO authorities in other countries. The "certification" process validates and verifies the credentials of individuals, whereas "registration" verifies conformance of an organization's EMS to the ISO 14001 standard.

## **The ISO 14001 Standard and the Registration System**

As noted above, a significant challenge in evaluating the ISO 14001 registration system is that different stakeholders bring vastly different expectations about how the standard and third-party registration to the standard should perform. To some degree, the evolution of the standard has shaped these expectations. The requirements that were originally drafted for organizations and auditors checking EMS conformance produced considerable disagreement. This disagreement was particularly acute concerning the definitions and interpretations of “continual improvement” and “prevention of pollution.” According to one author, there existed “a deep chasm [on these points] between various ISO 14001 Technical Committee (TC) national authors” (Burdick 2000). European delegations wanted to measure environmental improvement in terms of reduced environmental impacts, such as reduced toxic pollutants. However, the U.S. delegation argued that continual improvement should be measured on enhancements to the performance of the EMS itself, such as internal auditors’ performance in identifying non-conformances. To date, the entities charged with accrediting U.S. registrars have largely refrained from developing specific guidance on how auditors should assess continual improvement and prevention of pollution (Ibid.).

Controversy also stems from differing expectations about the purpose and uses of EMSs and ISO 14001 registrations. To many private-sector authors and ISO 14001 advocates, the standard’s original intent was to provide a voluntary model for improving a business’ environmental management practices for its own purposes, and for validating conformance – like the ISO 9000 quality-management system<sup>4</sup> – to assure corporate headquarters and other businesses. Thus, it was to be primarily a by-business-for-business exercise. For some businesses, however, EMS adoption and certification also offered a possible rationale for regulatory benefits. This expectation caught the attention of environmental agencies, citizens’ environmental groups, and others that expected EMS certification to assure not merely better management for the sake of business, but also regulatory compliance and improved environmental performance. Critics have pointed out that ISO 14001 does not require regulatory compliance as a condition of registration and that there is no explicit link between the adoption of the standard and improved environmental performance. As a result, they have concluded that “ISO 14001 is inadequate on its own” (Krut and Gleckman 1998; Switzer 1999).

How the ISO 14001 standard was written and intended to operate, and whether it should meet public policy goals as a voluntary private-sector management standard, are important issues that go partly beyond the scope of this report. A more specific set of questions, however, concerns whether the accreditation, registration, and auditing systems for ISO 14001 operate in practice according to their stated purposes and procedures. To better understand the standard and its requirements, it is necessary first to know something about systems approaches and how the standard is designed to make environmental management systems more uniform.

### **What is an EMS?**

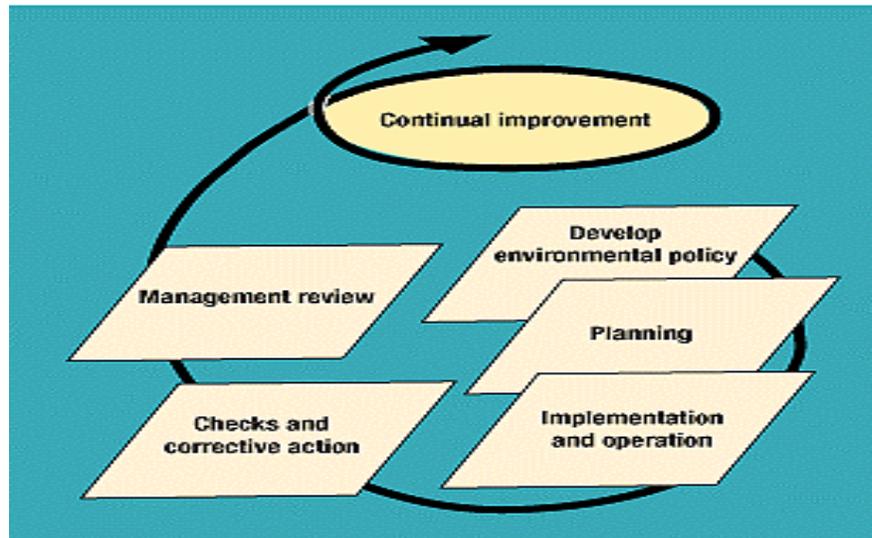
Most management systems are based on the plan-do-check-act (PDCA) approach, encompassing the actions that organizations undertake to systematize environmental management and achieve

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<sup>4</sup> ISO 9000 is a series of standards focusing on quality management systems that are designed to satisfy the quality-related expectations of an organization’s customers.

continual improvement (Schoffman and Tordini 2000). Such management schemes vary greatly from one organization or industrial sector to the next, but a systems approach to environmental management offers most organizations potential cost savings and management improvements, especially where no system or intentional process had previously been adopted.

**Figure 1-2. Continual Improvement**



An organization usually implements an EMS for internal business management purposes unique to its own needs and priorities. The EMS may be limited to certain facilities, operations, and activities, or it may be applied more broadly and comprehensively to assure consistency in environmental management throughout the organization's operations and supply network. Motivations for adopting an EMS may include compliance assurance, environmental liability minimization, cost minimization, and resource efficiency, as well as achieving uniform reporting, documentation, and training. The decision to implement or adopt a particular EMS is voluntary; law does not require it and there are no established rules or requirements for having an EMS. However, many voluntary environmental programs and supplemental environmental projects sponsored by regulatory agencies are now encouraging EMS adoption.

### **The International Organization for Standardization and ISO 14001**

Large, multi-national businesses initially pursued an international EMS standard both to develop a consistent and systematic approach to environmental management and to forestall the possibility of global environmental regulatory mandates. It was envisioned that businesses themselves could demonstrate their ability to manage effectively and improve their environmental performance continually on a voluntary basis. As global sourcing of raw materials and manufacturing expanded rapidly in the 1990s, major transnational businesses faced growing public expectations of responsible environmental performance. At the same time, many operated in less-developed countries where standards for performance were at best highly varied, sometimes absent or, more often, codified on paper but not consistently or effectively enforced

(Panayotou 1999). An international standard and framework for environmental management conceivably would make it easier for corporate management to operate more efficiently and effectively worldwide.

The International Organization for Standardization (ISO) is a non-governmental organization founded in 1947. It is composed of a worldwide federation of national standards bodies representing more than 100 countries. It originally was established to facilitate the international exchange of goods and services by forming international standards in a variety of product-oriented applications for use in member countries.

In response to calls for an international EMS standard, ISO created the Strategic Advisory Group on the Environment (SAGE) in June 1991. SAGE assessed the need for an international environmental management standard and recommended that ISO move forward with its development. In 1992, ISO members convened to begin developing a set of standards designed to help organizations establish and objectively evaluate EMSs. In January 1993, ISO created Technical Committee 207 (TC 207), charged with developing the ISO 14000 series of standards and guidance documents.

TC 207 is composed of various subcommittees and working groups and receives input from technical committees from different countries. ISO member nations contribute their input to TC 207 through national delegations. The committee is not directly responsible for establishing a conformity assessment system to support certification under the ISO 14001 standard. However, it both monitors and participates in international efforts to this end. Much of this work takes place through the ISO Conformity Assessment Committee (CASCO). In 1996, CASCO formed an EMS working group, whose mandate includes developing general requirements for bodies that operate EMS assessment and certification/registration programs. The group has produced Guide 66 that lays out requirements for certification bodies and the certification process.

ISO released the 14001 standard in 1996. The same year, TC 207 finalized and published ISO 14004 -- an EMS standard -- and three auditing standards: ISO 14010, ISO 14011, and ISO 14012. Published ISO standards must be reviewed and revised every five years.

The U.S. Technical Advisory Group (U.S. TAG) to ISO TC 207 develops positions for the United States on all the standards within the ISO 14000 series. U.S. TAG is comprised of approximately 500 members representing industry, government, not-for-profit organizations, standards organizations, environmental groups, and other interested stakeholders. It has the largest number of members of any nation's ISO delegation. Several other organizations are involved in the administration of U.S. TAG's input to TC 207, including ANSI, the American Society for Testing and Materials (ASTM), the American Society for Quality (ASQ), and NSF International.

Topics addressed by other documents in the ISO 14000 series include environmental auditing, environmental labeling, environmental performance evaluation, and life cycle assessment. However, the ISO 14001 standard for EMSs is the centerpiece and the basic framework for the entire 14000 series. It also is the only standard in the series that is certifiable by third-party registrars. All other standards are advisory. ISO 14001 specifies a number of requirements that

an EMS must have and, to qualify for ISO registration, firms must conform their EMSs to all of these requirements.

### What the Standard Requires

ISO 14001 requires five major components:

- The development and adoption of an environmental policy, with senior management commitment;
- A planning process that identifies all of the environmental aspects and impacts of a facility's operations, products, and services, along with all other applicable legal and other requirements, including clearly defined targets and objectives for making improvements;
- A system for EMS implementation and operation, with structures for responsibility and programs for training, both internal and external communication of the EMS, documentation, and operational controls of processes that can give rise to significant environmental impacts as well as emergency preparedness;
- A system for checking how the EMS is operating, taking preventive and corrective action, and keeping records on the EMS itself and on EMS audits; and
- A management review process through which senior management periodically reassesses the suitability, effectiveness and adequacy of the EMS to assure continuous management improvements.

(Meyers 2000).

As a first step, ISO 14001 requires an organization<sup>5</sup> to adopt an environmental policy, which it defines as a statement "by the organization of its intentions and principles in relation to its overall environmental performance." It must include commitments to compliance, prevention of pollution, and continual improvement of the EMS. The environmental policy is intended to signal environmental commitment as it forms the basis for an organization's intentions and principles related to the overall EMS. The policy thus provides the foundation for action and for setting environmental objectives and targets. In fact, an EMS "is defined in terms of steps taken to develop, implement, achieve, review and maintain an organization's environmental policy" (Schoffman and Tordini 2000). Commitments made in the environmental policy statement are subject to confirmation in environmental audits performed by ISO 14001 registrars, that is, if organizations choose to have a third-party registrar certify their EMS conformity with the standard.

The similarities and differences among various EMSs, the organizations seeking to be certified, and the express commitments that organizations make in their environmental policy statements must be taken into account during the registration processes and, for that matter, in any assessment or review of EMS practices.

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<sup>5</sup> ISO 14001, Clause 3.12, defines the term "organization" as "a company, corporation, operation, firm, enterprise, institution, parts, or combinations thereof, whether incorporated or not, public or private that has its own function and administration." Organization is used throughout this report to refer to these multiple categories.

## The National Accreditation Program's Process for Accrediting EMS Registrars

ISO 14001 is administered through national accreditation bodies, which are linked worldwide informally through their trade association, the International Accreditation Forum, Inc. (IAF). In the United States, the American National Standards Institute (ANSI) and the Registrar Accreditation Board (RAB), acting as the ANSI-RAB National Accreditation Program (NAP), cooperate in accrediting registrars and course providers to ISO 14001. NAP is the formal title for an expansion of similar programs that the two organizations operated jointly for the ISO 9000 quality management standard. NAP is designed to accredit third-party registrar bodies, validate their auditing practices, and ensure that their methods conform to national and international standards for registrar organizations. NAP's European counterparts include the United Kingdom Accreditation Service (UKAS) and the Dutch Council for Accreditation (Raad voor Accreditatie or RvA).

ANSI describes itself as a federation of companies, trade associations, standards developers, and technical societies, as well as labor groups, academics, consumer organizations, and approximately 40 government agencies. Its mission is "to enhance both the global competitiveness of U.S. business and the American quality of life, by promoting and facilitating U.S. voluntary consensus standards and conformity systems."<sup>6</sup> Based in Washington, D.C. and New York, ANSI is the official U.S. representative to the ISO and coordinates U.S. positions on the ISO 14000 series.

The numbers of EMS registrars and course providers accredited by NAP continue to grow. As of March 10, 2001, they were as follows:

	14001 Registrars	14001 Course Providers
Accredited:	27	14
Applications pending:	10	1

RAB is the organization charged with the day-to-day operations for registrar accreditation. It was founded in 1989 as an "affiliate of the American Society for Quality Control, a not-for-profit that derives its income from accreditation and certification operations" (Switzer and Ehrenfeld 1999). It is staffed by management and accreditation auditors and operated by a board of directors comprised of representatives from industry and government agencies, such as EPA.

The cooperation between ANSI and RAB dates to 1989-90, when RAB was first established. Because it lacked a sufficient international presence, RAB approached ANSI and formed a joint program, initially pertaining to the accreditation of registrars for ISO 9000 quality management

<sup>6</sup> American National Standards Institute, "ANSI Accreditation," pamphlet dated September 1999.

systems. When ISO 14001 was finalized in 1996, ANSI sought designation from the federal National Institute of Standards and Technology (NIST) as the official U.S. registration body responsible for administering ISO 14001; and RAB sought the same role. The two organizations eventually combined their ISO 14001 operations to form the NAP, more commonly referred to as ANSI-RAB. In addition to accrediting registrars, ANSI-RAB is also responsible for accrediting course providers who train ISO 14001 auditors.

### **The EMS Council**

Prior to ISO 14000, most work of RAB and the international standards community strictly concerned businesses since their focus was on ISO 9000. Due to the public's stake in environmental protection, however, ANSI's Board Committee on Conformity Assessment created a multi-stakeholder task force on U.S. accreditation to the new ISO standard. As a result of the task force's recommendation, ANSI created the EMS Council, which is composed of representatives from state and federal agencies, as well as representatives of registrars, auditor course providers, and business users.

The EMS Council makes the most important decisions affecting U.S. EMS registration practices. It sets the policies and procedures for accrediting registrars and course auditor providers in accord with the guidelines promulgated by ISO. The Council reviews the applications for accreditation submitted by registrars and course providers; decides whether to approve or deny them; reviews the ongoing performance of registrars and course providers; and has the authority to suspend or withdraw accreditation.

The Council is comprised of 14 voting members: three from NGOs, three from government, three from industry, and three from accredited bodies. In addition, the group has two at-large members and three liaisons.<sup>7</sup> ANSI-RAB personnel serve as staff for the EMS Council. To avoid the appearance of conflicts of interest, Council members working for registrars do not vote on the accreditation of new registrars. Similarly, course providers do not vote on the accreditation of new course providers.

ANSI-RAB does not provide an honorarium to Council members, nor do they pay travel expenses. This financial constraint has made it difficult for NGO members to participate. One of ANSI-RAB's challenges has been to maintain a quorum for the Council's quarterly meetings.

ANSI-RAB must focus its attention on the business of accreditation and must perform well in order for the EMS Council to operate smoothly and make its decisions in a timely and business-like manner. According to ANSI-RAB staff, there have been only one or two occasions during the past 12 months when the Council has lacked sufficient information from applicants to act on a staff recommendation.

### **ISO 14001 Registrations**

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<sup>7</sup> As of December 2000, members were drawn from nine organizations, including The Environmental Law Institute; Lucent Technologies, Brookhaven National Laboratory, Pennsylvania Department of Environmental Protection, U.S. Department of Energy, Ford Motor Company, Lockheed Martin Corporation, Underwriters Laboratories, and Boston College Law School.

Most firms that conduct ISO 14001 registrations and audits existed long before ISO issued the 14001 standard in 1996. Indeed, independent auditing dates back several hundred years and is steeped in two origins, ship inspection and international financial accounting (Switzer 1999). According to Furger (1997), "Classification societies were created in the eighteenth century by the London insurance market as a means to assess marine risk." Societies offered independent verification of ship design, construction, and maintenance practices to investors according to the classification society's rules. Ship inspection firms such as Det Norske Veritas (DNV), Lloyd's Registry, Bureau Veritas,<sup>8</sup> TÜV, and ABS are among the ANSI-RAB accredited ISO 14001 registrars currently operating in the United States.

Ship inspection and financial accounting converged in the practice of quality management auditing. As Switzer notes, and the results of this study confirm, many organizations offered ISO 9000 auditing prior to publication of the 14001 standard. They saw assessment of conformity with ISO 14001 as a natural evolution from ISO 9000. Independent verification audits also originated with international accounting firms that developed attestation services for financial disclosure statements. Financial accounting firms such as KPMG and Deloitte & Touche Inc. conduct quality management audits and more recently moved into ISO 14001 audits. Deloitte & Touche is ANSI-RAB accredited, and KPMG recently applied for ISO 14001 accreditation.

#### Accredited Registrars

Twenty-seven registrars currently are accredited by ANSI-RAB. Registrars that operate in the United States need not be accredited by ANSI-RAB, but may instead be accredited by comparable institutions from Great Britain, the Netherlands or elsewhere. Some registrars find it worthwhile to be accredited by several national accrediting bodies; others do not seek accreditation at all. The accreditation process takes time and money. Whether registrars pursue accreditation depends largely on their customers' demands. It appears that most U.S. firms that hire registrars to conduct third-party audits want them to be accredited somewhere.

Notwithstanding the small number of registrars accredited by ANSI-RAB, many have offices around the United States and some, around the world. Many of the registrars that conducted ISO 9000 quality audits saw ISO 14001 as a natural business progression, so they provide a full range of audit services to their established clients.

Registrars accredited by ANSI-RAB belong to a variety of firms. Some are subsidiaries of large ship insurance or financial accounting firms, while others are spin-offs of governmental or non-profit organizations. Still others are small engineering and design companies. Most report they operate consulting arms that design EMSs, but several registrars directly provide EMS consulting services. Those that offer EMS consulting and ISO 14001 registration do so through their parent companies. However, registrars must separate their EMS consulting services from auditing services because ANSI-RAB has explicit restrictions on accredited registrars offering both services to the same clients.

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<sup>8</sup> Bureau Veritas established BVQI in 1998 to conduct ISO 9000 registration. It now offers ISO 14001 registration.

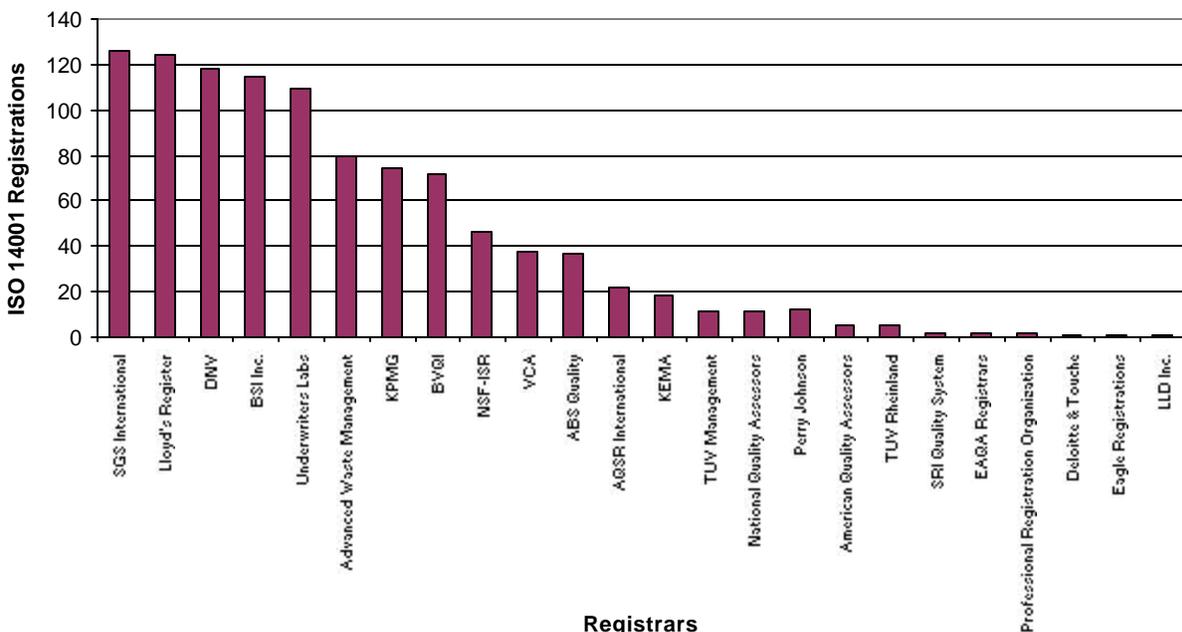
By most accounts, the accreditation industry is highly competitive and has narrow profit margins. Client organizations that hire registrars report that they pay registrars annual auditor fees ranging from \$7,000 to \$25,000. Most fees are determined by the number of days needed to plan and execute an EMS registration audit and to conduct subsequent periodic surveillance audits.

Some registrars compete only in specific industry sectors and offer specialized audit procedures or detailed audit reports. One registrar that recently received ANSI-RAB accreditation reported that it planned to market its services exclusively to minority-owned, small auto-part suppliers. Others specialize in electronics, automobile manufacture, and chemical production sectors. This specialization has led some U.S. registrars to focus on specific geographic regions where particular industries are clustered. For example, upper Midwest registrars concentrate on automotive firms and suppliers. Some registrars, however, report that they compete based on reputation, not specialization.

### Number of Registrations Performed

Eight registrar firms have performed approximately 80 percent of the 1,130 ISO 14001 registrations in the United States. Not surprisingly, registrars count registrations performed as a measure of where they and their competitors stand. Yet this metric is of limited use because not all registrars publish their number of registrations or certificates issued. The lack of a definitive and regularly updated registry of registered organizations and facilities poses a more general problem for those interested in information on ISO 14001. Some registrars elect not to publish this information because they do not believe it is a solid indicator of audit quality. For example, one prominent registrar once listed the number of 14001 certificates issued each year, but has since stopped for fear that it "sent the wrong message to customers and to the public."

**Figure 1-3. ISO 14001 Registrations Performed by Registrars in the United States (as of August 2000)**



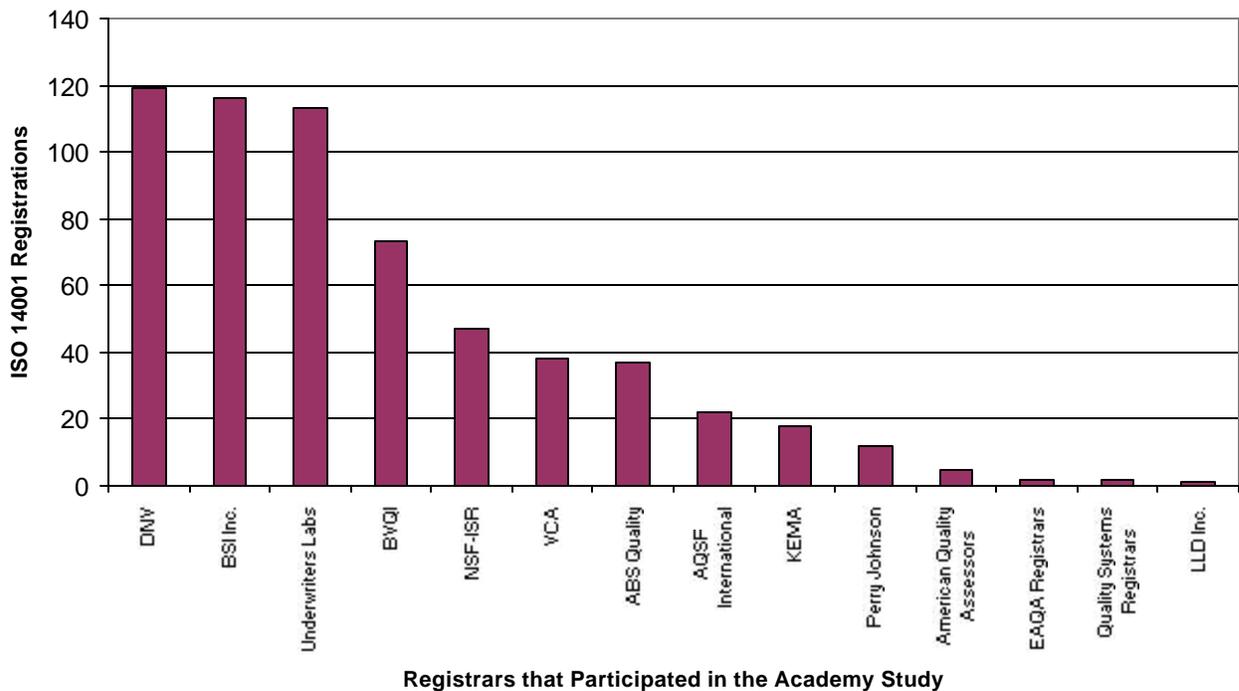
Source: International Environmental Systems Update. "ISO 14001 Registrations--North America." 2000.

Notes: The information is derived from the number of ISO 14001 registrations in North America through August 1, 2000. Not all organizations that have obtained registration disclose their data publicly. Twenty-four of the 25 registrars listed are ANSI-RAB-accredited or are applying for accreditation. One registrar is not ANSI-RAB-accredited. Information was not available for two registrars. These data exclude registrars that operate primarily in Canada and Mexico.

Figure 1-3 depicts the number of ISO 14001 certificates issued in North America by 24 of 27 U.S. registrars, thus illustrating the composition of ANSI-RAB-accredited registrars in terms of market share. Because many large companies have multiple facilities in the United States and abroad, measuring market share this way can be misleading. For example, the Vehicle Certification Agency (VCA) had certified only three organizations as of September 2000. Yet they included 32 Ford Motor locations, four Honda of America manufacturing plants, and one Honda of Canada manufacturing plant. Thus, VCA's market share based on certifications may appear small, but its roster of client firms suggests that its volume of trade is substantial.

Figure 1-3 also illustrates that registrars' market shares break down almost evenly into thirds. As of August 2000, eight registrars reported that they issued more than 60 ISO 14001 certificates. Nine issued between four and 37 certificates, and others issued between one and four certificates.

**Figure 1-4. Total Registrations Performed by Academy Study Participants (as of August 2000)**



Source: International Environmental Systems Update (IESU). "ISO 14001 Registrations--North America" (2000).

Note: The information is derived from the number of ISO 14001 registrations in North America through August 1, 2000. Not all registrars and organizations that have obtained registration disclose their data publicly. Not all registrars interviewed for this study appear in the IESU Update. Thirteen of the 14 registrars depicted are ANSI-RAB-accredited or have applied for accreditation. One registrar is not ANSI-RAB-accredited.

The registrars that participated in this study closely reflect general industry trends. Figure 1-4 shows the number of registrations that 14 registrars, participating in this study, performed through August 2000. As illustrated, the composition of the participants is similar to the industry as a whole. Five registrars had performed more than 40 ISO 14001 registrations; five had performed between 13 and 27 registrations; and four had performed between one and four registrations.

### Organizations Seeking Registration

U.S. firms or public organizations use ISO 14001 registrars for a variety of reasons. This is discussed in greater detail in Chapter Six. Some do it for strictly internal reasons, such as to bring rigor and discipline to their EMSs; others do it to obtain external credibility for their EMSs. A third-party audit conveys the authority of the registrar, the national accreditation body, and the international standard. It also may signal to customers that a firm has tight management systems in place. At the same time, some people are concerned that firms may seek registration as a "smokescreen" to obscure average or below-average environmental performance.

As discussed, large U.S. auto manufacturers are among the strongest ISO 14001 registration advocates. They moved quickly to register their own manufacturing plants and have directed their suppliers to implement EMSs. These requirements, and others like them in other supply chains, may dramatically improve the environmental performance of thousands of smaller companies in the United States and abroad. Conversely, they may induce those companies to seek ISO registration using inexpensive means. If suppliers merely need and want a certificate, they may try to find a registrar that will issue one without the presence of an EMS that will lead to meaningful and continual improvement. This prospect is one reason why so many people are interested in U.S. registration practices. Observers wonder whether the accreditation system is sufficiently robust to reject weak EMSs and suspend incompetent, careless, or unethical registrars.

### **Moving Toward Continual Improvement**

Several emerging issues have shed light on U.S. registration practices. Most relate to how firms, registrars, ANSI-RAB, and the EMS Council resolve conflicts inherent in the registration system. For instance, some firms derive value based on the internal pressures and discipline generated by third-party audits; for them, audit reports to corporate managers are confidential documents used internally. Other firms, however, derive value from the impression that registration creates for people external to the firm; these include other manufacturers, potential customers, government agencies, and the general public. The latter firms and their registrars generally have a strong interest in maintaining the integrity and prestige of ISO 14001 certificates.

Conflicts also arise because registrars must necessarily compete for business. So long as they all provide uniformly high standards of competence and integrity, registration practices will remain strong. However, if any compete on the basis of “paper certificates” that fail to reflect high registration standards -- or on the basis of low prices that reflect correspondingly lower competence or rigor in auditing -- the credibility and external value of ISO 14001 certificates will be undermined.

### Consistent and Competent Application of ISO 14001

If the requirements of ISO 14001 are not implemented consistently and competently, the purpose of the international EMS standard will be undermined. Firms that select suppliers or award contracts on the basis of ISO 14001 must be assured that a registration performed and certificate awarded in one location are as valid as those in another location. With respect to a number of important illustrative issues – such as confidentiality, interpretation of “continual improvement” and “pollution prevention,” and judgments of “major” and “minor” non-conformances – evidence suggests that not all registrars and auditors implement the system uniformly. The following chapters illustrate debates between the EMS Council and ANSI-RAB staff over how to resolve inconsistencies in registrars' interpretations of ISO 14001.

#### The Audit Teams: Skills, Time, and Costs

Applying the 14001 standard uniformly requires that auditors and their registrars conduct sufficiently detailed and competent audits. In order to do so, auditors must have requisite competence in environmental science, technology, environmental law and regulation, and systems auditing. If an individual auditor does not possess this knowledge, registrars should assemble teams of auditors who, together, have these competencies.

Some observers suggest that the audit teams used to register firms do not always include people with adequate knowledge of environmental engineering, environmental science, or environmental regulations. As a result, they may produce inadequate EMS assessments. Others argue that making ISO 14001 registration more cost-effective requires ANSI-RAB or the EMS Council to set guidelines for the number of person-days needed for an audit. Some maintain that auditors should be able to cover both ISO 14001 and ISO 9000 simultaneously in order to reduce costs. Those who disagree with this approach assert that the size and complexity of firms differ too much to make the duration of audits consistent. They also believe that ISO 9000 audits and ISO 14001 audits are sufficiently different that it is undesirable to combine the two. As the following chapters show, the real question is not how many days are required to perform EMS audits, but how to develop training, guidance, and oversight mechanisms to ensure that audits are sufficiently rigorous and uniform.

#### Transparency

It is very difficult for individuals to identify what entities are registered to ISO 14001 and even more difficult to determine those whose registrations may have been suspended or modified in scope. Several companies compile registration data from registrars and provide the information to paying subscribers. ANSI-RAB maintains and publishes a list of its accredited registrars and course providers, but it does not publish lists of the organizations that registrars have certified.

Moreover, it is unclear how ANSI-RAB would handle public notification of a situation in which the EMS Council suspends or withdraws the accreditation of an EMS registrar or course provider.

### Auditor Independence

The integrity of ISO 14001 depends on rigorous third-party audit reports. Although ANSI-RAB has explicit restrictions on accredited registrars offering consulting and auditing services, several registrars interviewed for this study said that the issue of auditor independence is a problem. If so, what additional assurances are in place to guarantee such independence from the businesses being audited?

This issue has long been debated in the field of financial accounting which is similar to EMS auditing in some respects. Chapter Two examines in greater detail the practice of financial auditing to identify the measures that the financial auditing profession is using to address these challenges. It also identifies the similarities and differences between financial and EMS auditing. Chapter Three then shows how ANSI-RAB and EMS registrars are addressing the issues and challenges to auditor integrity that are likely to arise as the EMS registration system continues to grow.

### Confidentiality

Some organizations undergoing EMS audits have allegedly withheld information from their EMS auditors for fear that their report might later be used against the firms in regulatory enforcement actions or private party lawsuits. Others fear that auditors might learn and divulge trade secrets. To avoid the possibility that an audit report could be subpoenaed as evidence in a trial, some firms hire their registrars through their legal counsel, believing they can guard audit results under attorney-client privilege. Chapter Two examines how controversies surrounding audit privilege laws that arise under compliance auditing may influence the types of information that clients withhold from EMS auditors. More broadly, the following chapters examine how ANSI-RAB, registrars, auditors, and client organizations are dealing with the confidentiality issues and challenges encountered as the EMS registration system expands.

### Small and Medium-Sized Enterprises

Another issue raised by third-party verification involves small to medium-sized businesses and municipal operations. Some claim that these enterprises are unable to afford ISO 14001 registration and that there should be a simplified, less costly registration process. Chapter Six examines these arguments and provides some potential ways to reduce the registration costs.

### Responding to the Expected Boom

To date, automobile company demands for their suppliers to implement EMSs and register under ISO 14001 have not overwhelmed the capacity of EMS consultants and registrars. Most registrars have seen a slow but steady increase in the number of applications for registration. Nonetheless, the increase may accelerate over time and tax the capabilities of the current system,

leading to decreased audit quality. Others worry that there are currently too many environmental professionals working in the ISO 14001 arena. Perhaps the most pervasive worry is that, if hundreds or thousands of firms seek registration merely to satisfy customer demands, they will not devote the energy or commitment to make their EMSs real management tools, thus undermining the perceived value of ISO registration.

The following chapters examine how ANSI-RAB and accredited registrars, auditors, and organizations that have or may seek registration are addressing these important issues. The report examines steps that each actor in the system, as well as interested individuals, agencies and organizations outside the EMS registration system, should consider in anticipating future challenges.

## **CHAPTER TWO**

### **EMS AUDITING IN PERSPECTIVE**

Most businesses and third-party registrars view adoption of an ISO 14001 EMS as a way to bring discipline to their management of environmental issues. Nonetheless, the advent of third-party certification has fueled conflicting expectations among businesses, government regulators, policy makers, academic researchers, and environmental groups.

Some firms have adopted an ISO 14001 EMS expecting that government agencies will use public policies to recognize and reward them for having EMSs that perform well. Some regulators see ISO 14001 as a basis for rewarding superior environmental performance, easing regulatory burdens, correcting patterns of non-compliance, and refocusing agencies' inspection, monitoring, and enforcement resources on low-performing businesses. Meanwhile, environmental groups view it as a way to promote quantitative reductions in pollutant discharges and other adverse environmental impacts or, alternatively, as a public-relations ploy representing no assurance of improved environmental performance. Given these divergent expectations, it is not surprising that ISO 14001 third-party registration does not satisfy all these needs (Academy 2000).

To better understand how these differing expectations have emerged and persisted, it is necessary to distinguish EMS auditing from other forms of environmental auditing and auditing in general. Third-party auditing and certification services have long histories in numerous contexts, most notably financial attestation by certified public accountants (CPAs) and ship certification by maritime inspection companies.

In the environmental field, EMS auditing was preceded by two decades of environmental compliance auditing and at least one decade of due-diligence auditing by banks and insurance firms to identify unanticipated environmental liabilities. It is thus inevitable that EMS auditing may be perceived, correctly or incorrectly, as similar to one of these prior models. The following sections identify some key features of each model and highlight important similarities and differences between them and EMS auditing.

#### **Financial Audits**

One model for EMS registration and auditing is the widely used independent audits of public corporations' and non-profit organizations' financial statements. The U.S. Securities and Exchange Commission (SEC) registers organizations or individuals in the public securities market, such as companies that offer stock and investment managers. Organizations or individuals registered with the SEC submit annual financial reports that must be certified by independent certified public accountants (CPAs) as conforming to generally accepted accounting practices. Similarly, legally incorporated non-profit organizations undergo periodic audits to assure contributors and tax authorities that funds are properly reported and managed.

The purpose of the SEC's requirements is to protect investors and ensure the openness and integrity of the financial marketplace (Gardiner 2000). As with EMS audits, these financial

audits are done by private businesses, whose reputation depends on the competence and credibility of their attestations. Indeed, a significant number of major accounting firms are exploring EMS auditing as an additional line of business services.

The backbone of the global financial system is the readily available supply of dependable information. False or misleading information can lead to market failures, such as insider trading and consumer fraud. As many more private individuals now use financial markets to finance and secure retirement savings or college funds, the role played by independent financial auditors is paramount. Investors are comfortable relying on company information to make a decision partly because an independent auditor regularly and periodically checks and certifies the accuracy of financial information reported by publicly traded firms.

In this system, CPAs express independent opinions on financial statements, which the financial community and public use to make investment decisions. In reviewing a firm's financial statements, the auditor attests that they "reflect generally accepted accounting principles." However, financial attestation does not mean that the information contained in one company's financial statements is more accurate than the information disclosed in another's report. In this regard, financial auditing resembles EMS auditing; the performance of one firm is not measured relative to others.

Unlike EMS auditing, financial accountants adhere to externally defined professional standards. The SEC places two requirements on CPAs that certify an organization's financial statement. They must be licensed and in good standing with a state board of accountancy, and they must be professionally independent of the organization they audit. The standards by which the CPA obtains a certificate and how an audit is conducted depend on state boards of accountancy. The SEC, however, establishes the Generally Accepted Accounting Principles (GAAP)<sup>9</sup> and the Generally Accepted Auditing Standards. The latter were developed by the American Institute of Certified Public Accountants (AICPA), a private standard-setting, professional organization of CPAs. Financial consultants are also certified, unlike the EMS field where there is no certification requirement for consultants that help firms to design and administer their EMSs. The requirements that CPAs must be licensed and independent do not by themselves fully confirm the quality of financial audits. To monitor and assure the quality control systems for CPAs, the SEC also relies upon private organizations. By one account, 97 percent of U.S. organizations are audited by CPA firms that undergo periodic "peer review."<sup>10</sup> The SEC does

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<sup>9</sup> Financial reporting is based on a set of qualitative characteristics and underpinning assumptions. GAAPs rely on these underlying assumptions:

- The entity definition (variations in the form through which corporate control is exercised via joint ventures, subsidiaries, or other controlled operations);
- The accrual basis of accounting (requires that the results or impacts of the activities should be disclosed in the period during which those activities occur, a critical event as occurring at the point of sale);
- The "going concern" assumption (generally expected to continue operations for the foreseeable future, rarely longer than 18 months after the balance sheet date);
- The conservatism or precautionary principle (there should be thoughtful action in advance of proof of cause); and
- The concept of materiality (related to relevance: information is only relevant to a user if it is material in financial terms, that is, does its presence or absence influence the user's investment decision?).

<sup>10</sup> AICPA estimates that 400,000 CPAs are practicing in the U.S. and that, of those, 331,000 are members of AICPA (AICPA Public Relations 1997).

not require their peer review, but it randomly checks the auditing systems - such as the one administered by AICPA - and can make an independent observation about whether or not these systems correctly monitor adherence to expected levels of financial quality control.

### Conduct and Liability

CPAs must follow generally accepted auditing standards, such as AICPA's code of ethics and code of conduct. There are no rules identifying an accountant's liability related to an audit opinion. Yet if there is a problem because the accountant failed to follow professional standards, he or she can be sued and courts will decide actual liability.

Similar liability issues have not yet arisen in the context of EMS auditing, but they have arisen as a concern for ISO 9000 systems. For example, during the interviews for this study, some EMS auditors wondered whether ISO 9000 auditors who had audited facilities where deficient Firestone tires were manufactured would assume liability for the product failures, which were implicated in the deaths of some U.S. motorists. These EMS auditors were concerned that, as the profession grows, they may be held liable for adverse environmental impacts occurring at facilities they audit or caused by products made there.

### Peer Review

For financial audits, the peer review system is the primary method of ensuring that CPA firms are performing high quality work. A peer review is a detailed audit of the accounting and auditing procedures of one licensed CPA firm by another CPA firm. As such, it is a measure for saving public resources while keeping CPA firms accountable to each other. The reviewing firm produces a report, either unqualified -- if no deficiencies are found -- or qualified, depending on the severity of the disclosed problems. The reviewee must submit a response to the reviewer prior to the results being submitted to the state accountancy board or society administering the review. This provides the reviewer an opportunity to ensure that the firm understood how it can correct deficiencies in its auditing and accounting practices (Kirk 1997).

The SEC model is attractive to a small but growing group of state and federal environmental regulators. To them, it offers hope that a public agency can harness private third parties to conduct EMS auditing and oversight. Some government programs also have harnessed EMS audits on a pilot basis as potential tools for assuring environmental performance. EPA New England's Star Track initiative, which includes EMS implementation and auditing as an element, was patterned partly after methods employed by the SEC. As mentioned in Chapter One, some other EPA programs require third-party auditing and public access to EMS results in order to enhance credibility with the public.

Like financial audits, it is hoped that EMS audits will provide reliable assurance to interested parties outside the audited firm that proper management is taking place. To date, however, EMS auditing in the United States remains primarily a private system. The private National Accreditation Program (NAP) oversees the EMS registration system, in contrast to the public SEC that registers financial auditing system and oversees auditing practice standards. Because the SEC's purpose is to assure investors of the truthfulness of financial disclosures, financial

audit findings -- unlike EMS audit findings -- are accompanied by a detailed public report of financial performance.

ISO 14001 acknowledges that EMSs address the environmental needs of a broad range of interested parties and the society at large. Unlike the financial auditing model, however, ISO 14001 only requires public disclosure of a firm's environmental policy statement. It leaves to the discretion of adopting organizations the decision whether to make public their environmental performance data and, if so, which ones and in what form. The confidentiality of an EMS audit report is similar to the "management letter" often sent by a financial auditor to a firm's executives. This practice of non-disclosure for EMS data contrasts sharply with the SEC's requirements for public release of financial statements along with the CPA's attestation that the audit conforms to all generally accepted accounting principles.

Critics of ISO 14001 auditing note that the financial accounting profession does not always set an ideal example. In recent years, financial accounting firms have built lucrative consulting businesses that may conflict with the required independence of their financial audits. Recently, some accounting firms have even been compelled to divest or separate the two functions. Auditor independence is a concern in the ISO 14001 field as well, as this report discusses below.

Critics of ISO 14001 also argue that financial auditing may not be an appropriate model for EMS auditing practices that relate directly to protection of human health and the environment. Failures in financial auditing may carry serious public consequences, but they can usually be remedied by recovery of money. Failures in EMS auditing can lead to disastrous environmental impacts that cannot be mitigated so easily.

### Auditor Independence

Financial accounting and auditing have received close scrutiny due to exigencies inherent to the profession. The independence of outside auditors who certify the accuracy of corporate financial reports is one issue, although U.S. financial markets are considered "the cleanest in the world" (Bryant Quinn 2000). The issue of auditor independence is relevant to EMS auditing as well. An increasingly popular practice among accountants is for their firms to sell separate consulting contracts to the same clients for whom they prepare financial audits. The lucrative nature of this work has led to its increase because accounting firms tend to earn more from consulting than from auditing. Some are concerned about this potential conflict of interest when accountants sell consulting services (Turner 2000). Since 1993, the auditing revenues of accounting firms have grown at only nine percent annually, while their fees for consulting and similar services have grown at 27 percent (Barker 2000).

To address this problem, the SEC has established conflict of interest rules that govern financial auditor independence. Similar limitations in the ISO 14001 standards for EMS auditors and registrars prevent them from selling consulting services to audited clients. Yet under SEC rules, independence refers primarily to the specific principle that auditors must not have any ownership interests in the companies audited. Further, until recently, the SEC rules have been applied only

to accounting firms that derive a significant share of their income through services other than auditing.<sup>11</sup>

Over the years, the SEC has brought hundreds of lawsuits and other actions based on accounting rule violations. Many of these involve auditor independence (Bryant-Quinn 2000). More recently, the SEC has focused on the amount of wealth that accounting firms and employees now derive from their consulting business. Specifically, the SEC is concerned that a firm's consulting arm might create internal accounting systems or computerized financial reporting systems. At issue is whether the accountants will audit numbers that their own firm has produced as tightly as a truly independent auditor would (Gardiner 2000). The SEC does not want accountants to certify the accuracy of financial statements that the firm itself may have helped to produce through its consulting work.

In November 2000, the SEC unanimously approved new rules governing auditor independence. They allow the accounting industry to continue providing non-auditing services provided that two requirements are satisfied. First, the services and fees must be disclosed in the client's annual proxy statement. Second, the client's audit committee must determine that providing the services does not compromise the auditor's independence (SEC 2000). In response, some firms have split their consulting and auditing practices.<sup>12</sup>

In contrast to financial audits of publicly traded businesses, EMS auditing remains a voluntary, internally-driven practice for better managing an organization's environmental responsibilities and impacts. Auditing the financial statements of SEC-regulated companies is a way to assure the truthfulness and disclosure of financial information, while EMS auditing remains largely a voluntary initiative by-business-for-business. As such, it is one tool in the sound management of an organization's operations, along with best practices, compliance with applicable laws, and the general duty to safeguard against negligence and protect public well-being.

The EMS registration and auditing system is designed to ensure conformity and adherence to the international EMS standard. However, it also is intended to provide assurance of conformity with ISO 14001 to stakeholders who are external to, however, the audited organization. ANSI-RAB's registration and certification systems may not be directly analogous to financial accounting and auditing; but some of the origins, purposes, and practitioners for EMS auditing are based on financial accounting. Moreover, architects of EPA initiatives designed to test third-party certification see the financial auditing system as a model to supplement the agency's enforcement programs (Academy 2000).

## **Compliance Audits**

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<sup>11</sup> Independence means that the CPA, the CPA's firm, or a firm member, cannot during the time of a professional engagement have any financial interest in the financial statements of the CPA's client or be an underwriter, voting trustee, or employee of the client. Further explanation is provided in Rule 2-01, Qualifications of Accounts, at [www.law.uc.edu/CCL/regS-X/SX2-01.html](http://www.law.uc.edu/CCL/regS-X/SX2-01.html).

<sup>12</sup> Among the registrars accredited by ANSI-RAB, Deloitte & Touche is accredited to conduct ISO 14001 audits, whereas KPMG has applied for accreditation from RAB. It remains to be seen how these two firms, and other ISO 14001 accredited registrars, will keep their consulting services separate from their environmental auditing practice.

A second model for EMS auditing is environmental compliance audits. Many U.S.-regulated businesses began to undertake compliance audits during the 1970s, partly in response to federal statutes, which Congress expanded significantly during that period. Companies saw these audits as a means to evaluate compliance with environmental regulations and to assess their potential liability for non-compliance. At the time, most companies undertook audits voluntarily as a way to identify and correct compliance problems. Headquarters and corporate-level auditing units thought they could forestall costly legal sanctions for the actions of branch plants or subsidiaries. This practice further developed and expanded throughout the 1980s and 1990s.

Compliance auditing accelerated during the 1980s in response to the strict liabilities associated with Superfund. Lending institutions and insurance firms began to require due diligence audits in financial transactions involving real estate. Seventy-five percent of all U.S. industry currently engages in some form of internal environmental auditing (Davis 1997). In response to the increased reliance on compliance audits, professional organizations, consulting firms, and standards organizations began to develop auditing procedures, guidelines, and standards (Tibor and Feldman 1996).

EPA began to develop audit policies in 1986 and defined environmental auditing as a "systematic, documented, periodic and objective review by regulated entities of facility operations and practices related to meeting environmental requirements" (EPA 2000). Some have found that most companies use the term environmental auditing and compliance auditing interchangeably (Tibor and Feldman 1996). By EPA's definition, however, auditing can meet several objectives. These objectives include verifying compliance with environmental laws and regulations, evaluating the effectiveness of systems in place to manage environmental responsibilities, and assessing the risks from regulated and unregulated activities in facility operations.

#### Audit Privilege Laws

EPA and state environmental agencies sometimes address what happens when a company's compliance audit detects violations in conflicting ways. On the one hand, an audit by its very nature is designed to find such violations. On the other, producing such information and making it available to a third-party auditor may trigger legal consequences, such as immediate disclosure, lawsuits, and sanctions. This issue is germane to ISO 14001 registration practices partly because it may influence the types of information that businesses are willing to divulge to EMS auditors as part of the registration process. In the context of compliance audits, businesses maintain that they have only a Hobson's choice whether to hide the information and hope environmental regulators will not find it or to report the violation and face stiff penalties.

Responding to this dilemma in the 1990s, some states adopted audit privilege and immunity laws, which would grant businesses, municipalities, and other entities "safe passage" to conduct self-audits and then disclose and correct any violations. About 20 states have enacted these laws, and ten more were considering them during 2001. The laws are intended to create an incentive for regulated entities to detect and correct noncompliance on an ongoing basis. However, EPA has tried to dissuade state legislatures from adopting some versions of these laws that may allow businesses to hide information about violations rather than make them public. This approach

could undercut the states' ability to carry out their delegated responsibilities for enforcement of federal environmental statutes.

Moreover, since 1995, EPA has initiated a series of policies to promote compliance auditing, ranging from reduced penalties to increased rewards such as public recognition. It also has developed and recently updated its own compliance-oriented audit policy for encouraging firms to self-disclose violations voluntarily. EPA makes incentives available for facilities that meet the terms of its audit policy, such as eliminating or substantially reducing the gravity component of civil penalties and recommending against criminal prosecution of the disclosing entity. The updated audit policy also restates EPA's long-standing practice of not using requests for copies of regulated entities' voluntary audit reports as a trigger for federal enforcement actions (EPA 2000). Some states have adopted this approach rather than create audit-privilege and use-immunity laws for self-disclosure of environmental violations.

#### Confidentiality: Affirmative Statements

The controversy over audit-privilege and use-immunity laws was originally directed toward compliance auditing, rather than EMS auditing. In fact, it predated ISO 14001. Yet, despite such differences in purpose, scope, measurement and outcomes, this debate has colored the perceptions and expectations of those who may be inclined to mistrust EMS audits. The state audit-privilege laws have fueled concerns among environmental organizations and some environmental regulators that incentives for third-party auditing could create perverse or unintended outcomes because they might shield regulated facilities from liability for potential wrongdoing, negligence, or non-compliance.

Whenever a facility invites a third-party auditor to review its EMS, it accepts the possibility that the auditor will discover problems that would not otherwise have been identified. In this respect an EMS audit is similar to compliance auditing. The auditor's job is to look for weaknesses in the EMS, including evidence demonstrating whether the firm understands its legal obligations and is capable of identifying and fixing any actual or potential non-compliance situations. Companies that genuinely seek to carry out consistent and superior environmental management welcome these findings as a key step toward correcting and improving deficiencies. Companies that only want to be reassured or certified for what they are already doing may find these discoveries unwelcome.

#### **EMS Audits**

As discussed above, compliance audits and EMS audits have different yet intersecting purposes. The former are designed to insure that an organization complies with all regulatory requirements. In contrast, EMS audits seek to make certain that an organization's EMS conforms to the ISO 14001 standard. The standard requires an organization to commit to legal and regulatory compliance and to demonstrate that it has a continuously improving EMS that will effectively implement and fulfill its commitment to compliance. However, ISO 14001 does not per se require an organization to maintain compliance. In fact, EMS auditors are neither trained nor expected to serve as compliance auditors. On the other hand, compliance auditors typically limit their responsibility to determining compliance or non-compliance. Unlike EMS auditors, they do

not take responsibility for assuring that effective management systems are in place to prevent recurrence of violations. This key difference is perhaps the most misunderstood fact in the debate over the purpose and effectiveness of the ISO 14001 standard.

In principle, compliance audits are somewhat more straightforward than EMS audits because the auditor's task is to determine compliance with specific regulations. At the same time, a compliance audit requires detailed familiarity with complex federal and state regulations and the performance of environmental monitoring and control technologies used for achieving and maintaining compliance. Under this audit, an action is either in compliance or not, although compliance is not always based on a single event but, more likely, on a series of events over an extended period of time.

In contrast, EMS audits require the auditor to make more subjective decisions as there are few clearly right or wrong ways for managing an EMS. Although the EMS audits are less straightforward than compliance audits, the auditor's duty is straightforward: to determine conformance or nonconformance to all elements of the ISO standard within the organization's defined scope of operations. As such, auditors must ensure that an adequate system is in place to assure regulatory compliance, to correct non-compliance, and to prevent future non-compliance. To make that judgment, EMS auditors typically identify non-compliance situations and then determine how their causes have been corrected so they are less likely to recur. Nonetheless, EMS auditors do not judge compliance or non-compliance in a particular instance, nor do they systematically evaluate all possible sources of regulatory non-compliance.

Compliance audits and EMS audits also use different measures to gauge success. Frequently, the success of a compliance audit is based on the number of non-compliance findings identified, while the success of an EMS audit is based on the clarity and accuracy of the findings identified (Davis 1997). A third-party EMS audit, including ISO 14001 certification, cannot be characterized as an environmental compliance inspection or performance assessment (Schnee 1999). Rather, it is predicated in part on the organization's own goals and objectives for its EMS, including its commitment to an effective system for fulfilling regulatory compliance.

In addition, the scope of an EMS audit differs significantly from the scope of a compliance audit. The range of applicable regulations, as well as the processes and pollution sources subject to them, determine the parameters of a compliance audit. An EMS audit, however, may encompass either the full range of a facility's activities, processes, functions, and products that have significant environmental aspects and impacts; or it may be limited to a defined subset of them as chosen by the company. In addition to the facility's functions, the scope of an EMS audit is also determined by the elements required under the ISO 14001 standard, as well as the environmental goals, objectives, and targets set by the company.

### **Voluntary Programs Based on Audits**

Voluntary government incentive programs based on audits further intensify the conflicting expectations surrounding ISO 14001 audits. These programs also have added to the confusion between compliance audits and EMS audits. EPA's voluntary self-disclosure and audit policy was accompanied by an offer to decrease inspections for firms that conduct voluntary self-audits,

adopt EMSs, or engage in mentoring and public education. The Environmental Leadership Program (ELP) was one approach to rewarding corporate efforts that went "beyond compliance" by offering reduced EPA enforcement activities.

At the same time that ISO 14001 was developed in 1996, EPA New England initiated its Star Track program, which offered special recognition and regulatory flexibility in exchange for implementing EMSs, self-auditing, and improved reporting. In launching Star Track, former EPA regional administrator John DeVillars was particularly interested in determining whether third-party compliance audits – similar to financial audits done by independent CPAs and relied upon by the federal SEC – "could begin to privatize EPA's enforcement operations" (Academy 2000).

Unlike the ELP, however, Star Track required participants to undertake both a compliance audit and an EMS audit. For public policy purposes, it is significant that the two types of audits are necessarily distinct and require different, independent forms of verification. Participating organizations were required to audit all federal, state, and local regulations using a Star Track audit protocol. In addition, Star Track firms agreed to undertake an EMS audit based on ISO 14001. In contrast to compliance audits, these EMS audits were designed to identify ways that the participants' EMSs could be continually improved.

Star Track also replaced inspectors with a firm's chosen compliance auditors, with the expectation that third-party certification would validate the results. The resulting public benefit would be reduced demands on agency resources and decreased frequency and scope of inspections. Environmental performance reports would be provided, including data on unregulated elements of facility operations. Star Track envisioned that publishing these reports, coupled with the firms' commitment to verify performance, would spur additional improvement and enhanced performance beyond required standards.

If audits revealed compliance deficiencies, firms would be given 90 days to rectify them, with no enforcement action during that time except for certain egregious cases. These deficiencies would be disclosed to relevant regulatory agencies, but the amount of auditing information to be released to the public still has not been decided.

Although they were related, it is important to remember that the ELP and Star Track initiatives served very different purposes. EPA's audit policy program promoted voluntary self-disclosure, while the ELP reduced inspections as an incentive for firms to use compliance audits and EMSs. Although the ELP did not specifically refer to ISO 14001, the standard was embedded in it. In contrast, Star Track required both compliance audits and EMS audits to promote the concept of third-party verification. Star Track also was based on the notion that recognition and rewards would provide participants with incentives to improve performance.

Furthermore, Star Track proposed that increasing the number of more compliance-minded firms would allow EPA to focus its inspectors and other enforcement resources on firms with greater likelihood of violations. Not surprisingly, regulators and representatives of EPA's Office of Enforcement and Compliance Assurance viewed with deep suspicion the idea that enforcement could be privatized (Academy 2000). It is important to note, however, that neither the ELP nor

Star Track envisioned third-party registration under ISO 14001 as the way that privatization could be achieved.

EPA has acknowledged that “significant, long-lasting environmental results” could be achieved on a broader scale by “shifting the curve toward better performance.” It recently launched the National Performance Track Program, a two-tiered program that incorporates some of Star Track’s features and those of similar leadership initiatives in Oregon, New Jersey, Wisconsin, and other states.

In general, these EPA and state efforts have leveraged the use of EMS-based approaches to encourage environmental stewardship. Although compliance-focused, these leadership initiatives are designed to provide less burdensome options within the existing regulatory system, which does little to encourage and reward environmental stewardship and pollution prevention. Some efforts, such as Oregon’s Green Permits Program, also were intended to address environmental issues that cannot be adequately solved using current regulatory standards.

The Achievement Track, the first level of EPA’s National Performance Track, creates incentives for operators to achieve good compliance records and improved environmental results. It does not offer true regulatory flexibility, but couples the use of EMSs with performance reporting goals and incentives, such as reduced discretionary inspections, through a more streamlined nationwide process. While still under development, the Stewardship Track, EPA’s second and higher tier, is likely to rely on reporting goals and include another level of experimentation that will provide environmental leaders with an opportunity to innovate on a broader scale. This approach may also give EPA a test bed for refining new approaches to achieving environmental standards.

## **Summary**

Although EMS audits share some commonality with financial and compliance audits, their origins, purposes, standards of practice, and outcomes differ significantly. Despite such differences, some continue to view third-party EMS registration with deep suspicion (Academy 2000).

It is plausible that the early progression of major financial auditing firms into EMS auditing services led many to draw conclusions about the similarities and underestimate the differences. It also is likely that the emergence of public policies and initiatives promoting both compliance audits and EMS audits has contributed to this confusion. To assess effectively and equitably the practice of third-party EMS auditing, it is crucial to distinguish among the existing types of auditing, to note carefully their similarities and differences, and to differentiate among the public policy aims contained in initiatives to promote and regulate the auditing practice.

In attempting to use EMSs as elements of public policy initiatives, one challenge is to recognize that EMS registration and auditing have only recently developed. The reasons why firms use EMSs also vary greatly in practice. Most voluntary programs have recognized and accepted third-party certification of EMSs as an independent approach that can be linked, although not necessarily fused, with public policy goals such as reportable environmental performance

indicators or verifiable commitments to continual EMS improvement. Under ISO 14001, an EMS must commit to document conformance with voluntary obligations, which may gradually provide a basis for integrating voluntary programs and performance goals into a coherent framework (Feldman 1997).

EMS audits and compliance audits are related -- and may even be complementary -- but EMS audits should be evaluated using criteria different from those used for compliance audits. Although the success of a compliance audit is based largely on the number of actual or potential violations detected, the success of an EMS audit should be based on whether an organization's EMS conforms to the ISO 14001 standard. Conformance depends in part on whether the EMS promotes a process that helps an organization demonstrate its commitment to legal and regulatory compliance and to continual improvement of its EMS in such matters as correcting non-compliance situations and preventing their recurrence. Yet, commitment to compliance, although important, is only one of many areas EMS auditors must consider when ensuring that an EMS conforms to ISO 14001. The following chapters use management systems criteria, not those geared toward compliance auditing, to assess how well the U.S. system for EMS registration is working.

## **PANEL RECOMMENDATIONS**

### **❖ ISO 14001 Must Be Placed in Proper Perspective**

- Third-party EMS registration and auditing are subject to conflicting and, in some cases, inappropriate expectations on the part of businesses, government agencies, environmental groups, the public, and sometimes even members of the registration and auditing community.
  - Some environmental regulators consider third-party certification and EMS auditing to be privatized regulation, substituting for compliance monitoring and inspection to a degree in some facilities.
  - Some environmental groups perceive third-party certification and EMS auditing, at worst, as a business-controlled -- and therefore not credible -- substitute for compliance verification. At best, some see it as another environmental cop or unannounced inspector to catch facilities that violate regulatory requirements.
  - Some businesses envision EMS certification as justification for regulatory or public recognition benefits, while others prefer that it remain a strictly voluntary, by-business-for-business framework for management improvement.
- Given such conflicting and, in some cases, inappropriate expectations, it is most imperative that all interested parties understand how EMS auditing is similar to, and distinct from, other forms of environmental auditing, other types of auditing in general, and public policies designed to provide public recognition or other regulatory benefits.

### **❖ EMS Audits Must Be Distinguished from Other Forms of Auditing**

- The ISO 14001 accreditation, registration, and auditing community, as well as government agencies and the public, should carefully consider the similarities and differences between EMS and financial auditing. In particular:
  - Private firms perform both EMS audits and financial audits, but a public agency -- the Securities and Exchange Commission (SEC) -- oversees the standards for financial auditing practices. A detailed public report of financial performance measures accompanies financial audit findings; but ISO 14001 only requires public disclosure of a firm's environmental policy statement, not data on its environmental performance or key EMS information.
  - Financial auditing firms are liable for the consequences of inadequate audits.
  - Both financial auditors and financial consultants are certified.
  - Financial auditing firms are subject to a peer review process designed to ensure uniformity of professional auditing standards.

- As ISO 14001 auditing continues to evolve, ANSI-RAB and the EMS auditing and registration community should seriously consider developing a peer review system similar to the one that accounting firms use to maintain uniform professional norms of interpretation and practice. In addition, ANSI-RAB should consider requiring certifications for EMS auditors and EMS consultants similar to Certified Public Accountants (CPAs) for financial auditing.
- As the ISO 14001 registration and auditing system continues to develop, it could benefit from careful consideration of the experience of financial auditing and CPA certification, giving due consideration to important similarities and differences between these fields. This is particularly appropriate in areas of common concern such as legal liability, confidentiality, auditor independence, and managing conflicts of interest.

#### ❖ **EMS Auditing vs. Compliance Auditing**

- A third-party EMS audit is not a compliance audit. Yet if properly conducted, an EMS audit can provide verifiable evidence that an effective compliance-management system is in place to prevent non-compliance, to detect and correct non-compliance situations promptly, and to prevent recurrences. Conversely, a compliance audit normally would include a systematic inspection of all regulated conditions, technologies and practices, and operational records. This serves to detect any regulatory violations involving emissions, effluents, accidental releases, or the failure to maintain required records related to such conditions. However, it would not necessarily address the development of systems and procedures to prevent recurrences of non-compliance situations.
- ANSI-RAB and government agencies sponsoring EMS-based policy initiatives should collaborate on proper ways to understand the relationships between EMS audits -- including compliance-management system components -- and compliance audits. Such discussions should aim to clarify appropriate expectations of EMS auditors with respect to compliance-related EMS elements and to clarify the public's understanding of the limits of compliance auditing.

#### ❖ **EMS Auditing vs. Public Policies Based on EMSs**

- The ISO 14001 accreditation, registration, and auditing system has strengths, limitations, benefits, and costs irrespective of additional benefits -- regulatory flexibility or official approbation, for instance -- that may be conferred by EMS-based public policy initiatives. These initiatives should be examined and carefully evaluated on their own merits.
- Public policies should take into account the strengths and limitations of both ISO 14001 audits and strict compliance audits. Taken together, they are complementary and can strengthen the overall assurance of environmental compliance while reducing adverse environmental impacts. In fact, ISO 14001 implicitly recognizes this difference by requiring that an organization conduct an internal EMS audit and monitor periodically for compliance.



## CHAPTER THREE

### THE ACCREDITATION SYSTEM FOR ISO 14001 REGISTRARS

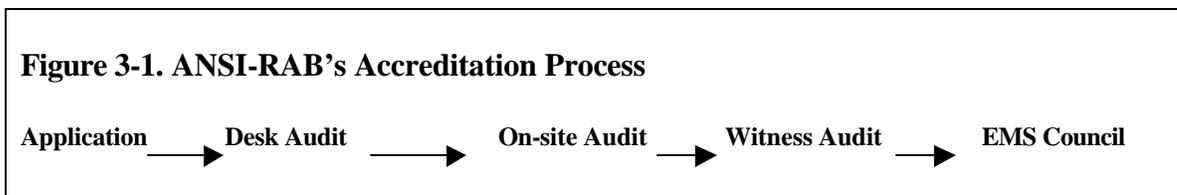
Registrar accreditation is the process by which a national accreditation body assesses a registrar's competence to certify companies under the ISO 14001 standard. It also signals to companies using third-party registrars that a process is in place to monitor the ongoing performance of registrars. Accreditation helps to ensure that individual registrars continually improve their audit operations and that their industry as a whole improves over time.

Two bodies, the American National Standards Institute (ANSI) and the Registrar Accreditation Board (RAB), jointly offer ISO 14001 accreditation of registrars in the United States through the National Accreditation Program (NAP), more commonly referred to as ANSI-RAB. ANSI-RAB is undoubtedly the most important component for ensuring the credibility of EMS registration practices. Its job is to make certain that accredited registrars and course providers implement ISO 14001 consistently and competently and that the registration system is able to detect and sanction those who register any EMSs that do not conform to ISO 14001.

The first part of this chapter highlights how and why registrars apply to ANSI-RAB for accreditation and how ANSI-RAB and the EMS Council accept them into the system and monitor their activities. Part two discusses the most pressing challenges that the accreditation system faces as it evolves, and ways that ANSI-RAB and registrars address these challenges. These include norms for auditor competence, the effort required to conduct an EMS audit, confidentiality of audits, auditor independence, and interpretations of key concepts and elements for ISO 14001.

#### ANSI-RAB's Process for Accreditation of Registrars

The accreditation process is usually composed of four to five steps: application, desk audit, on-site audit, witness audit, and EMS Council review and decision. The steps are illustrated in Figure 3-1. The following discussion examines each in greater detail.



#### Application

The initial step in the accreditation process begins when a prospective registration firm submits an application package to ANSI-RAB. The application contains the firm's commitment to meet the criteria for conducting ISO registrations. ANSI-RAB charges each new applicant \$10,000 for

the initial application and \$5,000 for each additional application thereafter.<sup>13</sup> A 30-day comment period includes published notice that the application has been accepted.

### Desk Audit

Once ANSI-RAB has received the application, its staff evaluates the information for completeness and conformance to the accreditation criteria. The term desk audit is used for this initial review of the applicant's conformance documentation.

### On-Site Audit

Assuming the applicant is successful in meeting the initial application and document review requirements, an ANSI-RAB administrator assigns an audit team leader and audit team. The team is responsible for conducting on-site office audits and witness audits. An office audit is defined as a systematic and independent evaluation, performed at an applicant's main facility, to determine whether its documented registration system has been effectively implemented.

### Witness Audit

In contrast to an on-site audit, a witness audit entails an ANSI-RAB audit team evaluate how well an applicant's auditors register prospective organizations in the field. The objective of this audit is for ANSI-RAB to ascertain the potential registrar's knowledge of the standard; the audit team's competence; and whether the individual auditors follow the registrar's procedures. ANSI-RAB's own staff auditors or its contract auditors may visit field offices on subsequent surveillance audits.

In order to complete a witness audit, applicants must be able to find a client that is willing to allow ANSI-RAB to evaluate or witness their individual auditors while they are conducting an EMS audit. Several registrars participating in this study reported that it has become increasingly difficult for registrars to find clients who are comfortable participating in a witness audit because they are concerned that a witnessed audit will be unusually burdensome. Clients appear to perceive ANSI-RAB auditors as very exacting or believe that such scrutiny will elicit more rigid, by-the-book examination on the part of the auditors.

### EMS Council Review

After the audit team and staff have concluded that the potential registrar has met all requirements, ANSI-RAB staff prepare a confidential summary presentation document, with the applicant's identity disguised, and present it to the EMS Council for the Council's decision on whether or not to accredit the applicant. The package includes a summary of the applicant's information, a summary of any non-conformances issued and their status, including the

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<sup>13</sup> Applicants also must pay for the time and travel of the accreditation auditor. Firms that receive accreditation also pay annual fees to ANSI-RAB.

applicant's response, the staff's evaluation of that response, and a statement as to the finding of the ANSI-RAB audit team about the registrar's competence for conducting EMS certifications.

The EMS Council makes the decision about whether to grant accreditation, and ANSI-RAB's staff reports the Council's decision to the applicant. If it is favorable, the firm is granted full accreditation as a registrar for four years, subject to regular review and continuous conformance to ANSI-RAB criteria and international requirements and practices. If an applicant does not meet accreditation criteria, ANSI-RAB provides a written denial. ANSI-RAB and the applicant may work through the corrective action process and begin another round of audits. An appeal may be filed within 30 days after receipt of a written denial.

ANSI-RAB maintains a process that publicly announces the Council's decision to grant, renew, or withdraw accreditation and applications for accreditation. A list of accredited registrars and applicants is posted on ANSI-RAB's website.<sup>14</sup> However, RAB does not publish the names of registrars that fail to obtain accreditation, nor does it publish the names of registrars about whom it has received or investigated complaints. Some, but not all, of the 27 registrars accredited by ANSI-RAB publish the names of their client organizations that have been registered to ISO 14001, although each must maintain and make available such listings. Several private organizations also publish lists of ISO 14001 organizations, their registrars, and accreditation bodies. However, ANSI-RAB does not verify or endorse these private databases.<sup>15</sup>

### Appeal Process

If denied accreditation, an applicant may appeal to ANSI-RAB staff and the EMS Council, with sufficient justification to reconsider their decision. The EMS Council's chair assigns a group of three individuals to review the appeal. If the group reaffirms the decision, the registrar may appeal to an independent body known as the Joint Operating Board (JOB). The last step in the appeal process involves the Board Committee on Conformity Assessment, but it has not been used to date. In the past two years, only one registrar has been denied ISO 14001 accreditation, although several applications have been returned for clarification or correction of non-conformances to the satisfaction of the EMS Council. According to ANSI-RAB staff, the EMS Council accepts most of the applications because the application process is very exacting.

### Surveillance Audit

To maintain their accreditation, registrars must demonstrate to ANSI-RAB a continuous ability to conduct EMS audits and all other aspects of the registration process according to ANSI-RAB criteria. After a registrar receives accreditation, ANSI-RAB staff return to conduct both office and witness surveillance audits after six months, and then on the first, second, and third anniversaries of the initial audit. Complete reassessment and re-accreditation are required every four years.

### Why Registrars Seek Accreditation

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<sup>14</sup> For ANSI-RAB's complete listing, go to: [http://www.rabnet.com/cgi/ems\\_re\\_query.cgi](http://www.rabnet.com/cgi/ems_re_query.cgi).

<sup>15</sup> A example is the "World Preferred Database," which can be found at <http://www.worldpreferred.com/>.

Registrars and ANSI-RAB do not enter into the accreditation process lightly. As discussed above, the process involves a substantial investment of time and money. Further, once registrars are accredited, ANSI-RAB requires them to forego offering consulting services to audited clients except through administratively separate units of the company. The loss of potentially lucrative consulting contracts represents an additional cost. Several registrars interviewed for this study noted that the initial investment provided them with strong incentives to ensure that the ANSI-RAB does not suspend or withdraw their accreditation, as the sanctions could cause permanent and even economically fatal damage to their reputations.

Most of these registrars sought ISO 14001 accreditation because they already had experience in conformity assessment and wanted to provide additional services to existing clients. They had previously offered ISO 9000 and other registration services, and many of their ISO 14001 clients came from that existing base. Registrars based or operating in the United States sought ANSI-RAB accreditation because their clients preferred registrars accredited in their own country. Most registrars interviewed for this study were accredited by ANSI-RAB, as well as by other internationally respected national accreditation bodies such as the United Kingdom Accreditation Service and the Dutch Council for Accreditation.

Not every interviewee stated that economics or geography motivated them to seek ANSI-RAB accreditation. Several said they had evolved from non-profit organizations and government agencies to promote adoption of the ISO 14001 standard. One registrar respondent was founded originally as part of a state economic development effort to certify small and medium-sized businesses to the ISO 9000 and 14001 standards. Another represented the branch of a British government agency charged with vehicle safety tests.

### **How ANSI-RAB Monitors Registrars**

Accreditation is designed to ensure competent and consistent application of ISO 14001 by third-party registrars and their auditors. ANSI-RAB promotes competence and consistency first through an initial assessment and evaluation and then by on-going surveillance and auditing. This process involves the three central steps of accrediting, registering, and assuring.

ANSI-RAB addresses the consistency of registration and auditing practices by using a close-knit group of accreditation auditors. According to ANSI-RAB staff, maintaining an elite core of these auditors has provided a consistent approach toward the 27 somewhat diverse registrar organizations. Although ISO has issued documents to promote consistency in how registrars do their jobs, some suggest that ANSI-RAB should develop more explicit guidance. Participants interviewed for this study agreed that the lack of such guidance produces variations in how registrars guarantee conformance with ISO 14001.

The language of ISO 14001, as approved in 1996, was deliberately chosen to enable users of the standard to have significant flexibility in implementing the requirements of the standard so that they could tailor their EMS to fit their organizations. This same flexibility, however, has also created uncertainty on the part of some users, as well as other interested parties, about how to interpret some of the standard's requirements.

ISO Technical Committee 207 (TC 207) has established an Interpretations Process to resolve questions about interpreting the standard. This Interpretations Process relies on the national procedures of ISO member countries, with review and discussion by TC 207 as needed to resolve differences or conflicts of interpretations among member countries.

In the United States, questions of interpretation are addressed through the Clarification of Intent Procedure established by the U.S. TAG. Anyone with a question about how to interpret a requirement of ISO 14001 can submit that question to a panel of experts who have been involved in developing the standard. If the question raises an issue not previously discussed during drafting of the standard, then the issue is deferred to the revision process for ISO 14001, which takes place every five years. Otherwise, the question is answered by experts who determine the consensus view of what the standard intended and, once this answer is agreed upon by consensus of the U.S. TAG, it is communicated widely within the United States as well as transmitted to ISO TC 207 for inclusion in the international Interpretations Process.

Clarifications of Intent issued by the U.S. TAG are disseminated widely to interested parties, including ANSI-RAB. In the past, ANSI-RAB management has provided these clarifications to registrars, but there does not currently exist a formal process for adoption of these Clarifications of Intent by ANSI-RAB, nor for routine communication of clarifications to registrars as a means to assure consistency of interpretation of the requirements by auditors.

The Panel believes that consistency of interpretation among registrars and their auditors of what is intended by the language of ISO 14001 would help to produce more consistency in applying the standard. To achieve this goal, ANSI-RAB should consider a more formal relationship with the U.S.TAG's process for Clarification of Intent. That arrangement could help to develop consistent interpretations and a more uniform approach by EMS registrars and their auditors. A more formal relationship between ANSI-RAB and the U.S.TAG's Clarification of Intent process would also help assure that both the organization implementing ISO 14001 and the registrar auditing that organization for conformance with the standard have a common understanding of what was intended.

The SEC's peer-review requirements, as discussed in Chapter Two, may also offer a mechanism for ANSI-RAB or the registrars' trade associations to promote greater consistency. Another approach may be for professional associations or other independent parties to develop a credible set of industry benchmarks. As one interviewee observed, "The problem with evaluating a registrar [only] relative to a set of criteria is that it gives you no way to evaluate how registrars perform relative to each other."

### Future Challenges

Some pressing challenges currently face the accreditation system. These include variation in how registrars calculate the number of days needed to conduct an EMS audit, audit confidentiality, auditor independence, and different interpretations of key concepts and elements under ISO 14001.

Neither ANSI-RAB nor the registrars and auditors interviewed provided specific examples of incompetent or poorly performing registrars. Nonetheless, the degree to which registrars use consistent interpretations of the standard's requirements under the current system remains a pressing issue. ANSI-RAB is expected to evaluate all registrars in the same manner, although registrars vary considerably in terms of size, industry focus, and approach to auditing. ANSI-RAB's own position is that using a small cadre of accreditation auditors is sufficient to ensure competence and consistency. The most that ANSI-RAB's accreditation can ensure is that a registrar meets the competence test and maintains an appreciable level of conformance to the standard and the accreditation requirements.

### **Ensuring Auditor Qualifications**

ANSI-RAB ensures auditor qualifications and competence by incorporating the ISO 14012 environmental auditing guidelines into its accreditation process. Generally, the criteria for becoming an EMS auditor are similar to those for a specialized job. Work experience, formal training, on-the-job training, solid personal attributes, and good judgment are necessary.

Lead EMS auditors seeking RAB certification may be required to attend and complete a 36-hour training course. For this purpose, RAB also certifies providers of EMS training courses. In addition, most registrars also have their own courses on audit procedures that reflect the style and orientation of a particular registrar. After this in-house training, EMS auditors must complete field training during which they are accompanied and observed by experienced lead auditors.

### **EMS Auditor Certification**

Although RAB independently offers voluntary certification to EMS auditors, there is no requirement that individuals working as auditors for ISO 14001 registrars be certified. Some observers think that there should be such a requirement. One interviewee cautioned that the ISO 14012 guidelines for qualifications of EMS auditors leave considerable room for variations in an auditor's level of environmental experience (Schnee 1999).<sup>16</sup>

As a result of these ambiguities in the guidelines, there exist wide differences in what registrars look for when hiring an EMS auditor. Some registrars have complained that auditors who are only trained in ISO 9000 sometimes certify organizations to ISO 14001. Critics believe that these auditors lack sufficient environmental experience to assess adequately such issues as whether a firm is demonstrating commitment to compliance. Indeed, a few registrars interviewed hire or contract only with auditors who are certified by RAB to conduct EMS audits. But this requirement is not the norm.

### Adequate Experience To Conduct EMS Audits

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<sup>16</sup> The 14012 guidelines state simply that "Auditors should have appropriate work experience, which contributes to the development of skills and understanding in some or all of the following:

- environmental science and technology
- technical and environmental aspects of facility operations
- relevant requirements of environmental laws, regulations and related documents
- environmental management systems and standards against which audits may be conducted
- audit procedure, processes and techniques
- formal and on-the-job training, which can be provided by the auditors' organization or by an external organization

Most registrars participating in this study were ambivalent about whether ISO 9000 auditors are capable of performing adequate EMS audits. Also, views were split on whether quality-systems-management experience was more important than an environmental background. Several registrars have addressed the issue by assembling audit teams of individuals who are experienced in both standards. At the same time, the size of an audit team has financial implications, and diverse teams may be feasible only for relatively complex audits.

Notwithstanding experience in environmental fields or with quality systems experience, registrars said client organizations want auditors who understand their specific industry. Registrars therefore seek to hire or contract with EMS auditors who possess technical expertise and a working knowledge of environmental regulations for particular sectors.

Registrars appear to prefer EMS auditors who have a strong understanding of ISO 14001. One registrar stated, “We want our auditors to be able to apply the intent of the standard rather than auditing to the letter of the standard.” Some registrars also believe auditors must be able to communicate well with clients, though they did not list this as the most important attribute. Another registrar said, “They can be the most highly trained auditors but, if they can't communicate, it is a waste of time. We need auditors to ask questions and phrase them so that they are understood.” This response may concern people-skills and semantics, but the point is critical. A primary way for an auditor to collect objective audit evidence is through interviews. Other means include examining documents and visually observing activities and conditions at the facility.

One of the most important ways for auditors to learn whether the audit information is accurate is through cross-examination of managers and staff, both across divisions and throughout the management chain. Inconsistent responses from various personnel raise red flags for potential minor or major non-conformance but, if an auditor is not able to communicate effectively, he or she may focus on the wrong issues or even produce a flawed conformance assessment.

### **Variations in Auditor Training**

Most registrars agree that auditors' communication skills are essential, but they hold different views on auditor training. Several registrars only hire or contract with RAB-certified auditors for EMS audits, but most also train their auditors in-house. Most registrars also prefer auditors who are considered to be seasoned professionals, namely individuals qualified as lead auditors with at least ten years' experience in industry or as an environmental compliance auditor. Still other auditors substitute professional degrees for experience.

There was also considerable variation among the registrars interviewed for this study about whether to hire auditors for full-time positions or on a contractual, as-needed basis. Clients, not registrars, usually pay auditors' travel costs, so contractors can help registrars to keep client costs down. Using contractors also helps registrars to adjust to market fluctuations and to reduce overhead. Some registrars require contract auditors to sign exclusivity clauses, while others use auditors who work for multiple registrars.

## **How Registrars Monitor Their Auditors**

In addition to seeking accreditation and deploying auditors, registrars monitor their auditors' performance. The registrars interviewed use a fairly consistent set of monitoring tools including internal and external reviews of audit reports, witness audits of auditor performance, and client surveys.

All registrars interviewed said audits are subject to reviews. Although terminology varies from registrar to registrar, the process is relatively uniform. Audit reports are submitted to individuals within the registrar organization who are charged with managing EMS registrations. EMS managers perform witness audits of their lead auditors and conduct in-office audits of their reports. ANSI-RAB then audits these reports and other supporting documentation and observes the auditors during field surveillance. All registrars interviewed said they conduct informal peer review and formal assessments through witnessed audits. As well, they are required to have an independent advisory board or technical committee, composed of officials and experts from the outside, such as academics, regulatory officials, and interested citizens. Members of these groups provide independent oversight of a registrar's audit procedures and findings.

Client surveys are the final tool that registrars use to monitor their auditors. When auditors complete their work, most registrars ask their customers to complete and return a performance evaluation questionnaire. This survey assesses auditor performance on a range of services including auditing, reporting, and responsiveness. If the clients are sophisticated and seek rigorous audits, asking clients to complete questionnaires may support audit rigor and uniformity. If clients lack sophistication and commitment to rigorous audits, these surveys may persuade auditors to be overly flexible or provide consultation to the client as a way to "add value," an inappropriate role for auditors.

## **Complaints to ANSI-RAB about Registrars**

ANSI-RAB must conduct ongoing accreditation follow-up, periodic surveillance audits, and complaint investigations to maintain the integrity of the accreditation process. Investigating complaints against EMS registrars to determine whether the complaints are credible or spurious is probably one of ANSI-RAB's most challenging functions.

The complaint and remedy process for registrars is outlined in a guidance document referred to as Guide 62. Among other requirements, registrars must have an explicit process to address a client's complaint or dispute over a non-conformance finding. The robustness of a registrar's complaint process is one factor in ANSI-RAB's registrar audit; one of the major audit points is a review of the registrar's complaint file. Clients may seek a legal remedy if the resolution process is unsuccessful.

ANSI-RAB's staff report directly to the EMS Council on the types of complaints they have received. Yet, when asked about the number and nature of complaints received, ANSI-RAB staff did not provide specific details on the total number of complaints, their nature, whether investigatory action was taken and, if so, the type. ANSI-RAB does not provide a regular public

listing of the numbers, types, and dispositions of all complaints. It has, however, made information public on the types and dispositions of complaints addressed by the EMS Council.

ANSI-RAB reported that it only addresses those complaints that staff are able to substantiate and where there is sufficient cause to act. Thus, the mere existence of a complaint may be insufficient to ascertain wrongdoing because it is hard to gauge the motives and accuracy of the complainants. However, some observers would like to see a more rigorous and detailed complaint process. Some would like ANSI-RAB to accept and, if warranted, investigate non-verbal and anonymous complaints and to document whether individual registrars receive multiple complaints.

Thus far, complaints about registrars are infrequent, according to ANSI-RAB staff and EMS Council representatives. For example, ANSI-RAB staff reported that they received only a handful of formal written complaints in 1999. Most were about firms improperly using the ANSI-RAB certification mark. Staff estimated that they received six complaints against EMS registrars in 2000, although the EMS Council reported nine. According to ANSI-RAB staff, the majority of complaints appeared to come from disgruntled former employees or rankled competitors who complained that they were being undercut in terms of price.

### **Client Organizations' Complaints To Registrars**

Many firms register and audit the same clients under the ISO 9000 quality management standard. To that end, one could reasonably expect them to conform to the ISO 9000 quality management standard themselves. Such an expectation could be extended to ANSI-RAB's own procedures for responding to complaints, given that it is the accrediting body for both ISO 9000 and 14001. Under ISO 9000, a registrar is required to have a documented, auditable process to address clients' complaints. Under ISO 14001, however, ANSI-RAB requires clients to take their complaints to their registrar first. The registrar will confer with its auditor and the client organization and will make a determination whether the client has a valid dispute. If the audit team's finding is supported, the client can appeal to the registrar's advisory board or technical committee, which will examine the issue independently to make a determination. If the board favors the registrar, the client can then take its complaint to ANSI-RAB as the accreditation body and several steps beyond ANSI-RAB to the ANSI Appeals Panel.

The registrars interviewed said they receive few complaints, but many comments, on auditor thoroughness and professionalism. Clients comment on the style of an auditor, and many of the complaints are related to the clients' misunderstanding of the audit process. One employee at an organization may claim that an audit was too difficult, while another may say that it was not thorough enough.<sup>17</sup> These misunderstandings arise when employees fail to understand that surveillance audits -- in contrast to inspections -- usually cover only some processes in depth.

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<sup>17</sup> It is tempting to conclude that these responses indicate uneven audits, but it is more likely that client organizations do not yet sufficiently understand how EMS auditing works. In contrast to an inspection, where all processes and procedures are examined, an EMS audit uses sampling methods to assess the degree to which an organization's EMS conforms with the ISO 14001 standard. Such sampling may leave some client managers feeling intensely scrutinized while others may feel they have prepared in great detail only to be ignored.

When an organization disagrees with the findings of its registrar, it has several options although a client cannot debate the validity of a finding when it occurs. Instead, ANSI-RAB encourages clients to address such matters at that time. When a client lodges a complaint, the lead auditor reviews it. If the lead auditor sticks to the finding and the client continues to disagree, the registrar's EMS program manager reviews the complaint. If the issue cannot be resolved at that level, the client organization may, at any time, request that ANSI-RAB review an interpretation or finding. Yet, registrars reported that this review is extremely rare.

### **Variations in Pricing and Consistent Applications of ISO 14001**

The 14 registrars who were interviewed for this study said that demonstrated experience in their line of business is the most important qualification sought by their clients. Cost was not the first, second, or even third most important reason. Nonetheless, most of the six complaints reported to ANSI-RAB in 2000 centered on how registrars should estimate the cost of an EMS audit. When an organization hires a registrar to conduct a third-party audit, it pays based on the number of days required for it. Thus, the cost inevitably depends on the complexity of the facility, the thoroughness of the audit, the size of the audit team, and the number of non-conformances that require return visits. The organization writing the contract clearly has a financial interest in streamlining the audit.

Firms are likely to make very different decisions about how much auditing they want to pay for. Some firms want the benefit of a thorough, rigorous audit, while others seek just enough to get and keep a certificate. At the same time, some registrars appear to reject jobs if they feel they cannot do a credible job within the constraints of a proposed contract.

For the ISO 9000 standard, the guiding factors in ensuring sufficient time to audit for conformances are the number of employees and days needed to complete registration audits. Price has not been established through a well-based set of objective criteria, but probably has been set through a market process responding to customer demand for accreditation. Although EMS certification may consume more or less time than for ISO 9000, the same factors provide useful guidance in assessing auditor time and price setting for ISO 14001 registration.

New voluntary guidelines developed by the Dutch provide a method for estimating person days or auditor time, based on such complexity factors as the number, nature, and gravity of environmental aspects. A few U.S. registrars have called on ANSI-RAB to issue specific guidance, perhaps akin to the Dutch guidelines, on the ideal number of days for audits of particular types and complexity. The rationale here is that adherence to this guidance would promote more uniform implementation of the ISO 14001 standard and would stem the undercutting of rigorous professional norms through shaving prices. However, critics charge that making ANSI-RAB's work easier would make the registrar industry less competitive. They further claim that unscrupulous registrars would find other ways around the guidelines if they were in place.

The real issue may be that audit days per se are not a robust measure of adequate registrar performance. ANSI-RAB presently assesses registrar performance by the quality of audit reports and whether they are commensurate with the extent of the clients' EMS activities. This method

allows ANSI-RAB to assess an audit relative to the standard, but it does not provide an objective method for comparing the performance of one registrar to another. An excellent auditor may be capable of conducting an audit in less time than competitors. The problem is that the industry lacks a true measure of what distinguishes an “excellent” or “adequate” EMS audit from a “poor” one.

One possible alternative to an audit-day guideline would be for ANSI-RAB to give detailed attention in its audits to registrars’ methods for scoping their services, for determining pre-audit preparation requirements and team composition, and for justifying the work necessary to perform a competent audit. Over time, ANSI-RAB’s own accreditation auditors could develop a body of comparative knowledge on such practices that could be used to develop more detailed professional standards based on work and range of expertise required rather than just on audit-days.

### **Audit Confidentiality**

When auditors do their work, they request documents and other objective evidence to see how the firm manages activities, from testing fire hoses to fixing non-conformance situations and other problems. It has been noted that some firms have previously declined to provide full access to such information given the possibility that an audit report could be subpoenaed as evidence in lawsuits alleging compliance violations. Writers have cited confidential interviews conducted in 1998 to explain:

Some companies have suggested offering "affirmative statements" signed by lawyers and executives, in lieu of data or documents, stating that appropriate procedures are in place. One registrar, at least, believes this is acceptable, stating, "Executives are signing responses to the [registration] auditor in lieu of showing papers. We feel we can still maintain the quality of the registration process" (Switzer and Ehrenfeld 1999).

ANSI-RAB requires that EMS registrars adopt methods for handling and reporting discoveries of non-compliance situations prior to starting a registration audit. EMS registrars and their client organizations often sign confidentiality agreements and mark audit reports to corporate managers as confidential for internal use only. Despite such assurances, however, some clients fear that an auditor's report could later be used against them in enforcement or civil actions. To avoid this possibility, some firms apparently have hired registrars through their legal counsel "in order to guard results under attorney-client privilege" (Ibid.).

ANSI-RAB addresses these affirmative statements in recent amendments to its registrar criteria document (RAB 3.2, p. 2.1.1.4). The amended criteria document requires registrars not to accept affirmative statements as a sole piece of objective evidence. Registrars also are required to obtain objective evidence demonstrating conformance with guidance section 4.5.1, the requirement for monitoring periodic evaluation of compliance. By itself, an affirmative statement that an internal environmental compliance audit was conducted under attorney-client privilege -- and that appropriate corrective actions were taken in response to the findings -- would be considered by ANSI-RAB as insufficient for determining whether an organization meets the compliance-monitoring clause of ISO 14001. At a minimum, the objective-evidence test requires a documentation procedure for evaluating legal compliance, objective evidence of implementation,

compliance reviews by managers, and evidence of implementation of identified corrective and preventative actions.

No registrar interviewed for this study accepted affirmative statements as the sole piece of objective evidence that an organization met the requirements of ISO 14001. However, one respondent from a large, highly respected registrar said that a firm would review such statements if they were accompanied by objective evidence demonstrating conformity with the standard. Objective evidence includes documents showing that procedures in question have been implemented and that corrective and preventative actions have been taken, as well as records demonstrating that facility management has reviewed the results of internal compliance evaluations and audits.

### **Registrar and Auditor Independence**

As with financial auditing, auditing an EMS that the same registrar has designed is a clear conflict of interest.<sup>18</sup> The issue of providing consultant services is addressed in ISO Guides 62 and 66, rather than in the standard itself. Yet registrars and observers disagree on the extent to which these two guides adequately address this issue.

ANSI-RAB also has issued an advisory document stating firmly that a “ANSI-RAB-accredited registrar, its employees and its agents, shall not be involved in activities that constitute a conflict of interests, nor any activity that may reasonably be perceived to constitute a conflict of interests, with the registrar’s registration service for any client.” Among its provisions, the advisory bars a registrar’s employees or subcontractors from auditing clients for whom they have provided consulting services in the prior two years. Two of the largest registrars interviewed reported that their parent organizations provide clients with information on how to develop an EMS. Separating the registrar from the parent organization is designed to protect against conflict of interest. Two others that participated are said to have such practices but did not deny or confirm this. Of the remaining 12 participants, none reported providing services other than EMS registration. Even so, a number said that auditor independence is an industry problem.

A more subtle pressure is the increased demand for auditors to add value to EMS audits, registrars said. This demand from client organizations compels registrars to walk a fine line between determining conformance with the standard and offering consulting services, a practice that ANSI-RAB explicitly prohibits. Offering an optional step in the registration audit, thus giving organizations an opportunity to review their readiness for registration, is one way registrars have responded to this pressure. Others identify “areas for improvement” during the audit process. For now, most registrars and auditors interviewed said they work hard to keep a firewall between auditing and consulting. One auditor said, “I tell the client that I can say *what* is wrong with their EMS but not *how* to fix it.”

Some auditors and businesses, perhaps the most idealistic ones, perceive auditing as an ongoing and constructive interaction between a business’s staff and a knowledgeable third party. According to this view, the auditing process itself adds value, through constructive yet skeptical probing for gaps between stated commitments, the philosophical principles intrinsic to the ISO

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<sup>18</sup> ANSI-RAB Conflict of Interest Advisory #4.

14001 standard itself, and actual management practices. The extent to which this view becomes a consistent norm will be an important factor in determining the future effectiveness of the ISO 14001 registration process.

### **Registrar Sanctions**

To ensure credibility of the EMS registration system, there must be a clear, understandable process for identifying and sanctioning cheaters: registrars who fail to review adequately whether a client's EMS conforms to the ISO 14001 standard. As discussed, ANSI-RAB seeks to avoid sanctions by providing a strenuous application and screening process. For example, ANSI-RAB recently turned down an application for accreditation when a witness audit showed that the registrar's team could not communicate with non-English speaking staff during its audit of a plant.

When federal banking agencies deal with the financial auditing system, they customarily resort to active persuasion and admonitions before sanctioning a bank because sanctions could cause serious harm to the bank, innocent customers, borrowers, and other financially interested parties. Similarly, ANSI-RAB is cautious about its sanction activities because the stakes to users of a registrar's services are so high and the effects on a sanctioned firm's reputation could prove economically fatal. In this regard, ANSI-RAB sees suspension or withdrawal of accreditation as a last resort. One representative explained, "The RAB can't walk into a multi-million dollar operation and say 'we're going to remove your accreditation' unless we have damn good evidence."

ANSI-RAB representatives reported that they have not yet resorted to suspension. When pressed for examples of serious ANSI-RAB registrar malfeasance, the only complaints addressed thus far have involved the misuse of the ANSI-RAB label and charges of competitor undercutting. ANSI-RAB also is aware that some organizations may seek third-party registration or EMS audits but do not care whether the registrar is accredited. There is no explicit requirement that EMS registrars must be accredited. Rather, ANSI-RAB appears to assume that the market will decide whether non-accredited registrars can be trusted and that registrars' accreditation gives them sufficient value and evidence of quality to make them the preferred choice.<sup>19</sup> So far, there is minimal evidence that non-accredited registrars are certifying EMSs in the United States, except for potential registrars that are still in the process of applying for accreditation.

Aside from public disclosures of sanctions, most registrars interviewed said ANSI-RAB has responsibility to show that it has robust complaint and sanction procedures. At the same time, they noted that the same onus is not just on ANSI-RAB, but also on all accreditation bodies, regardless of national affiliation. Registrars believe that the International Accreditation Forum (IAF), which governs national accreditation bodies, must take a more aggressive stance toward guaranteeing a more uniform accreditation process. In their view, there must be a credible international presence or else the system will not work. One registrar said, "The current system assumes that the registration process works perfectly." So far, the system seems to work well,

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<sup>19</sup> In Asia, for instance, registrar reputation is well established as an important criterion for the credibility of ISO 14001 registrations. Among exporting firms in particular, the identity of the registrar organization and the national body that accredited it are at least as important as ISO registration itself.

but registrars insisted that a definitive mechanism must be in place to prevent backsliding when the system is tested.

### **ANSI-RAB's Resources To Accredite and Monitor Registrars**

The National Accreditation Program (usually referred to as ANSI-RAB) is the only organization that has national oversight responsibility for accredited registrars operating in the United States. As discussed, ANSI-RAB derives its resources from application fees and annual membership fees and works with 7-10 accreditation auditors qualified to conduct EMS audits. Based on the size of the market and the fact that the amount of accreditation fees is based on the number of registrations issued, ANSI-RAB staff maintained that they are keeping pace with the market. Assuming that the market does not increase substantially, ANSI-RAB believes that it has the capacity to audit registrars on an ongoing basis. In fact, scheduling ANSI-RAB's oversight functions and surveillance audits is proving to be more challenging than maintaining a sufficient number of qualified accreditation auditors.

According to ANSI-RAB, however, none of the examples is sufficiently widespread to significantly impact the registration practice as a whole. They usually have been corrected by the combination of market forces and the accreditation system. For example, more than 80 registrars were operating in the United States in the first year that ANSI-RAB accredited registrars under ISO 9000. Of those, only 20 to 25 percent were accredited. The accreditation rate has since risen to 52 percent according to ANSI-RAB. In the case of ISO 14001, a newer standard than ISO 9000, very few third parties operating in the United States have not been accredited by some national accreditation organization, whether it is ANSI-RAB or a European equivalent.

### **Summary**

Within the registration practices system, ANSI-RAB's accreditation and auditing procedures are the most important component to protect the system's credibility. ANSI-RAB defines its job as ensuring that registrars and qualified auditors implement the ISO 14001 standard competently and consistently and that a system is in place to detect and punish those who approve an EMS not conforming to the standard.

Although opinions vary about auditor training and experience, the ISO 14001 standard and related procedural guide promote a rigorous system for ANSI-RAB and registrars firms to monitor their auditors, their audit reports, and their work in the field. However, the system fails to provide a horizontal procedure for comparing one registrar to another.

Some registrars complain that competitors do not uniformly apply the EMS standard during their audits, but it is important to note that ANSI-RAB staff, registrars, and auditors interviewed for this study could not provide any specific examples of incompetent registration practices. Rather, a more pressing issue is the degree to which the current system may not ensure that registrars consistently and uniformly interpret the requirements of ISO 14001.

Currently, ANSI-RAB promotes competent and consistent minimum assessment standards by using a small pool of accreditation auditors. The best that accreditation can ensure is that a registrar meets the competence test and maintains an appreciable level of conformance to

requirements. Aside from highly trained, well-paid accreditation auditors, there is no other objective way at present for ANSI-RAB or the registrar industry to promote uniform application of the ISO 14001 standard.

ANSI-RAB reported that the complaints received about EMS registrars are minimal and that most are about pricing or misuse of the ISO 14001 registration labels, not registration practices. Nonetheless, some registrars and observers believe that ANSI-RAB must do more to demonstrate that its complaint system is robust and transparent to the public and to document all complaints it receives by number, category, and disposition, if not by name. Meanwhile, one of the greatest areas for variation in how the standard is applied relates to qualifications of auditors (Schnee 1999). Most registrars interviewed, however, would prefer that auditors' qualifications be left to market forces and client preferences rather than formalized certification requirements.

Registrars also said that pricing creates the greatest incentive for uneven audit quality. Guidance documents specifying how to calculate the number of days necessary to undertake an EMS audit would contribute to more uniform implementation of the standard. They also could prevent undercutting of rigorous professional norms through shaving prices. However, the real issue may be that costs and audit days are not a truly robust measure of registrar performance. If registrar and auditor performance could be measured objectively, there would be no need for guidance on audit days.

Other potential areas for variation involve the types of information that clients will allow EMS auditors to see and the kinds of feedback client organizations demand from registrars. Some observers worry that audit confidentiality will undermine the ability of registrars and auditors to implement the standard credibly. Some organizations in the past have sought to provide EMS auditors with signed affidavits of conformity in lieu of providing access to potentially sensitive information (Switzer and Ehrenfeld 1999).

In October 2000, ANSI-RAB released an important guidance document requiring registrars to obtain objective evidence supporting any statement of compliance assurance. Registrars also are required to obtain objective evidence demonstrating conformance with Section 4.5.1 of ISO 14001, the requirement for monitoring periodic evaluation of compliance.

In addition to its guidance on affirmative statements, ANSI-RAB published an advisory to promote auditor independence. However, a number of registrars interviewed reported that some firms have failed to maintain a firewall between EMS consulting and auditing, although they did not provide specific examples.

ANSI-RAB views sanctions as a last resort and attempts to make the application process so strenuous that it will screen out incompetent or questionable registrars. Yet some observers believed that ANSI-RAB should offer greater assurance that its system is effective in identifying and punishing recalcitrant registrars or those who fail to avoid conflicts of interest.

## **PANEL RECOMMENDATIONS**

❖ **ANSI-RAB Must Play a Central Role in the EMS Registration System for the United States**

- ANSI-RAB is the most important entity for ensuring the credibility of the EMS registration system. Its job is to ensure that accredited registrars and certified auditors implement the ISO 14001 system consistently and competently, and that a system is in place to detect and to punish those who register EMSs that fail to conform to ISO 14001.
- ANSI-RAB and other national accreditation bodies must be a strong, vigorous, and positive force for upward harmonization of auditing and registration norms. They also should serve as the principal guardian against devaluation of the credibility of EMS auditing and certification; and they must act fairly but vigorously to correct, sanction, or suspend poorly performing registrars and auditors.

❖ **ANSI-RAB Must Ensure Uniform Implementation of the Standard**

- ANSI-RAB uses a small pool of highly trained accreditation auditors to provide horizontal consistency among registrars, as there currently is no other objective way that it or the registrar community can compare one registrar to another.
  - There must be sufficient flexibility in registrars' interpretations of ISO 14001 so that audited EMS systems are useful for both large and small enterprises and for vastly different types of businesses.
  - However, to be more useful and more credible, registrars' interpretations of ISO 14001 should be more uniform. A more formal relationship with the process for Clarification of Intent of the US Technical Advisory Group (U.S. TAG) would be helpful for this purpose.
- ANSI-RAB should consider using the peer review process of financial auditing and accounting firms as a model for promoting more uniform application of standards.

❖ **Close Attention Is Needed to Audit Planning and Bidding Practices**

- Some registrars seek guidance documents specifying how to calculate the number of days needed to undertake an EMS audit. They believe such documents would help to ensure more uniform implementation of ISO 14001 and would prevent undercutting of rigorous professional norms. The Panel believes however that the real issue is whether registrars are conducting audits consistently and at an appropriately high professional standard.
- ANSI-RAB should not develop a formal audit-day guidance document. Attempts to standardize time requirements for audits have inherent deficiencies and raise anti-competitive implications. This is especially true for the extraordinarily wide range of scopes and complexities of operations for EMS registration clients.

- As an alternative to an audit-day guidance, ANSI-RAB should incorporate into its accreditation and surveillance audits close scrutiny of registrars' scoping and bidding processes and effort-allocation criteria. This would help to ensure well-documented justifications for the effort and professional competencies devoted to audits of varied complexity and technicality.
- ANSI-RAB should consider developing more guidance on minimum standards for initial registration auditing, not based solely on audit-days on-site, but also on best practices for pre-audit planning, budgeting, scoping, team composition, and first and second-stage audit visits.

#### ❖ **Auditor Training and Experience Must Be More Uniform**

- Some observers caution, and the results of this study confirm, that the ISO 14012 guidelines for qualifications of environmental auditors leave room for potentially wide variations in the environmental experience of EMS auditors.
- As the registration system continues to evolve, ANSI-RAB should consider strengthening requirements for the environmental experience and education necessary when auditors to conduct an EMS audit.
- ANSI-RAB should consider requiring certification of all EMS auditors to assure that they maintain the highest possible integrity and that they assess conformity to ISO 14001 in a competent and consistent manner.

#### ❖ **The Complaints and Sanction Process Must Be Robust**

- ANSI-RAB reports the numbers of complaints against registrars that it receives. Yet it makes public few details on the specific numbers and nature of total complaints, nor what actions have been taken to investigate and resolve them.
- ANSI-RAB should provide greater assurance that there is an effective procedure to monitor, sanction, and report on all complaints lodged against its accredited registrars and their auditors.
  - There should be public listings and regular updates on the receipt, processing, and disposition of all complaints by numbers and categories, if not by name.
  - ANSI-RAB should explain better to registrars and the public how complaints are received, reviewed, and acted upon.
  - If it has not already done so, ANSI-RAB itself should be certified to ISO 9000, which requires a formal complaint management process.

#### ❖ **Timely and Accurate Registration Data Are Needed**

- Registrars are required to maintain and provide on request lists of clients registered to ISO 14001. This information is routinely provided to one or more commercial reporting services by many, but not all, registrars.
- Such information should be complete, publicly available, and regularly updated to include discontinuance or suspension of registrations.
  - If these steps are not taken, customers, government agencies, and the public may be left with the impression that a facility is conformant when in fact it has not maintained its registration.
- ANSI-RAB should resolve questions about who is responsible for maintaining a central public listing, how it should be paid for, and how registrar participation should be assured.

#### ❖ **ANSI-RAB Guidelines on Confidentiality Are Sound**

- ANSI-RAB recently adopted guidance on the requirement that registrars receive objective evidence of the existence and implementation of a legal compliance evaluation procedure, compliance review by management, and implementation of identified corrective and preventive actions.
  - The Panel endorses this sound guidance. Access to such evidence, as opposed to mere affirmative statements, is essential to any credible EMS audit. There are direct parallels in the financial auditing field, where auditors may also discover evidence of illegal practices and have the right and responsibility to review and report them.
  - The Panel recommends that the U.S. TAG to ISO Technical Committee 207 (TC 207) propose similar guidance for adoption worldwide.

#### ❖ **More Guidance on Auditor Independence Is Needed**

- ANSI-RAB has explicit restrictions that accredited registrars may not offer both consulting services and EMS auditing to the same client. Yet a number of the registrars interviewed for this study said auditor independence is a problem. There are parallels in the field of financial auditing, where some auditing firms have been criticized for insufficient separation between their auditing and consulting relationships with client organizations.
- The Panel recommends that the ISO Committee on Conformity Assessment (CASCO), which is charged with developing of ISO Guides 62 and 66, should consider making more explicit the definitions of EMS consulting, the actions that constitute consulting, and the actions that are necessary to ensure the independence of EMS auditors.
- ANSI-RAB should revise and strengthen its guidance on auditor independence.





## CHAPTER FOUR

### AUDITING EMSs FOR CONFORMITY WITH ISO 14001

#### Introduction

This chapter highlights the major components of an EMS audit. In so doing, it provides a foundation for discussing how field auditors evaluate an organization's environmental policy commitments, which is a key requirement of ISO 14001 and the focus of Chapter Five. This chapter also examines substantive auditing issues, such as how organizations demonstrate management commitment to continual improvement of the EMS and how they define their environmental aspects and impacts.

ISO has developed guidance documents providing general requirements for bodies that offer EMS conformity assessments and registrations. These documents include ISO 14004, which is an EMS guidance document, and three auditing standards: ISO 14010, ISO 14011, and ISO 14012. ISO 14004 advises organizations on how to establish an EMS and design an environmental policy. It also encourages organizations to establish environmental policies "where they can achieve obvious benefits" (Tibor and Feldman 1996). These advantages include focusing on regulatory requirements, identifying and limiting sources of legal liability, and identifying more efficient ways to use materials and energy.

Another important document is the new ISO CASCO Guide 66, which governs EMS auditing. Guide 66 became applicable on July 1, 2000; its requirements will be mandatory and auditable as of July 1, 2001. Among other requirements, it mandates a two-stage audit but does not elaborate on the methodology of the audit.<sup>20</sup> ANSI-RAB has issued additional guidance to clarify these requirements.

Generally, a registrar determines a client's EMS conformance with ISO 14001 using a process similar to the procedure that ANSI-RAB uses to accredit a registrar's competence for conducting registrations to the standard. The registration process consists of four or five steps: application, documentation review or a desk audit, site visit, on-site registration audit, and surveillance audits.

Guide 66 characterizes the on-site office audit as Stage 1 and the on-site registration witness audit as Stage 2. ANSI-RAB now requires an on-site assessment during both stages of the audit. A number of U.S. registrars increasingly offer additional on-site services, such as readiness reviews or pre-assessments. The readiness review is designed to ensure that a client organization is adequately prepared for the formal Stage 1 and Stage 2 on-site registration audits, and that appropriate auditors are assigned to conduct both audits.

Auditors use on-site audits to determine whether a firm's EMS conforms to ISO 14001. Auditors later use surveillance audits both to test the EMS in practice and to make sure it adheres to the standard and improves over time. The registration is good for three years; thereafter, the organization must re-register.

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<sup>20</sup> According to Guide 66: "Stage 1 shall provide a focus for planning the audit by gaining an understanding of the EMS in the context of possible significant environmental aspects of the applicant and of the organization's state of preparedness for audit. This stage shall be based on, but not limited to, document review. Stage 2 shall take place at the location of the organization." ISO Guide 66: General Requirements for Bodies Operating Assessment and Certification/Registration of Environmental Management Systems. NAP's revised accreditation criteria require a site visit at Stage 1, as well as Stage 2. NAP Accreditation Criteria 3.2, section 3.2.6a (October 25, 2000).

## **Application Process**

Application is the first step of the registration process. Registrars assign a lead auditor to work with the client on defining the scope and objectives of the EMS audit. The primary objective is to determine conformance with EMS criteria as outlined by ISO 14001. Auditors also are expected to do their work according to ISO 14001 and the auditing standards outlined in the companion document, ISO 14011. ISO 14011 requires auditors to review other objectives, including:

- Determining whether the EMS has been properly implemented and maintained
- Identifying areas for potential EMS improvement
- Assessing the capability of the internal management review process to ensure the continuing suitability and effectiveness of the EMS
- Evaluating the EMS as part of a potential contractual relationship (Tibor and Feldman 1996).

### Defining Audit Scope

The scope of an audit defines its extent, namely the activities and operations included in the EMS, for purposes of auditing and registration. The primary reason for identifying the scope of a registration audit is to capture accurately the environmental aspects of an organization's activities, products, and services that its managers can control and influence. Examples of scope statements include "the manufacture of aluminum beer and beverage cans" and "the manufacture of electronic printed circuit boards and accessories at the Santa Clara, California plant" (Tibor and Feldman 1996).

ANSI-RAB accreditation requirements do not prescribe how to define the scope of registration. This lack of an objective definition has "led to a wide variation in a registrar's definition as to what needs to be included under the scope of registration, regarding production and research facilities, internal and corporate departments and level of supplier influence" (Burdick 2000). All auditors interviewed for this study appear to rely on some method to determine the scope of an organization's EMS and areas that the registration will cover. Nonetheless, there exists the potential for non-uniformity among them. In one case, the scope of the EMS was limited to operation and maintenance, providing a reasonably thorough examination of those functions but not including new construction activities that may have significant future impacts on the former. Sometimes, complex facilities may include contractor-operated on-site functions that are not under an organization's full control. In other cases, organizations seeking registration could receive the benefits of certification without accepting some of the costs by excluding environmentally significant functions from the scope of the EMS. Such instances require registrars and auditors to exercise professional judgment and integrity.

### Sampling

In some cases, a registrar may certify a multi-site organization based on extrapolating information from audits conducted at some, but not all, of the company's sites. This practice is known as sampling. ISO Guide 66 does not address this issue, but ANSI-RAB guidelines instruct registrars on how to define a robust sample and how to use this method to register sites not audited initially under ISO 14001. If an organization has more than 52 sites, ANSI-RAB allows registrars to develop a sampling plan so that not every site is audited within the three-year registration period. The registrars interviewed varied in their approaches to sampling. Some reported that they offered to conduct EMS audits that use sampling; others did not.

Based on this information, the registrar determines the number of audit days needed to register the organization under ISO 14001. Factors influencing the number of days include the size of the

organization, the scope of its EMS, and its environmental impacts. Here, too, registrars interviewed reported variation in how days were estimated. Generally, audit days do not necessarily reflect a registration audit's overall complexity, but some observers said it should.

### **Desk Audits**

Once the registrar has agreed to provide services and the scope has been defined, the registrar performs a desk audit. The desk audit is designed to ascertain the client organization's preparedness to continue with the registration process. Auditors usually conduct this step off-site, reviewing the organization's EMS documentation to verify whether its elements conform to ISO 14001. Here, auditors may also begin to identify areas where the EMS fails to conform with the standard.

### **On-Site Readiness Review**

EMS registrars have found that not all applicants for ISO 14001 registration are as ready as they think they are. Therefore, a number of the registrars interviewed offer readiness reviews or pre-assessment audits to determine a firm's ability to develop and implement an EMS. As of October 2000, ANSI-RAB requires a Stage 1 site visit.

The pre-assessment can help registrars to create an audit agenda and can reassure clients that there will be no surprises at the actual on-site registration audit. ANSI-RAB has strict guidance prohibiting EMS registrars and their auditors from providing advice or consulting services for the design or implementation of a client's EMS. The auditor may only give objective feedback on whether the actual or planned EMS elements conform to ISO 14001. Nonetheless, some observers remain concerned that pre-assessment audits can enhance a client's success in obtaining registration. None of the registrars or auditors interviewed said that a pre-assessment audit guarantees a successful outcome. Most said that pre-assessments are a way for registrars and auditors to work with clients to improve planning for the registration audit. Once the auditor is satisfied with the review, a registration audit is scheduled and an audit team is assembled.

### **On-Site Registration Audits**

The registration audit determines whether an organization's EMS conforms to ISO 14001. It is a snapshot of the effectiveness of a continually operating and improving EMS. It tends to be the most extensive review of the entire system. Auditors conduct registration audits to help themselves and their clients understand better how well the EMS is operating in relation to programs and processes already in place, thus testing the effectiveness of both EMS planning and implementation.<sup>21</sup>

If the EMS auditor does not find major non-conformances with ISO 14001 during the initial audit, and if the audit report passes muster with the registrar and its independent review boards, the registrar registers the organization as conforming to the standard.

### **Surveillance Audits**

ISO Guide 66 requires registrars to conduct surveillance audits and reassessments to verify that the organization's EMS continues to conform to ISO 14001. ANSI-RAB provides further guidance on this

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<sup>21</sup> Audits conducted during any phase of the certification process -- initial or surveillance -- focus on present operations, not on what has happened in the past or what a firm plans for the future.

requirement. Registrars are not required to assess continuously the effectiveness of an organization's EMS; but surveillance audits typically occur twice per year, with a full reassessment every three years. Most registrars participating in this study reported that they send auditors back to an organization every six months to conduct surveillance audits for portions of the EMS. Registrars sometimes undertake quarterly reviews in rare cases.

Unlike initial registration audits, surveillance audits focus on parts of a facility and selected clauses in ISO 14001, not on the standard as a whole. This way, the auditor can work through the entire facility and examine all portions of the standard for conformity by the end of the three-year cycle. Because surveillance audits allow them the opportunity to examine specific portions of the EMS and to track those components over time, auditors believe that surveillance audits can be one of the most important features of third-party registration. As one auditor said, "The key to continual improvement is found in the surveillance audit."

ISO 14001 requires that auditors base their surveillance audits on the environmental importance of the activity being audited and the results of previous audits. The auditors interviewed use prioritization techniques to prepare for surveillance audits, which they typically initiate by asking the question: "What has changed since my last visit?"

In preparing for the surveillance audit, auditors review the following:

- organizational changes that may affect the EMS
- documentation changes and their implementation that may affect the EMS
- senior management's commitment to, and understanding of, the EMS results from previous EMS audits
- corrective or preventative actions, including non-EMS findings
- external communications
- a firm's compliance assessment system, including corrective actions for findings identified by its compliance assessment
- the status of the environmental policy statement
- evidence to show a firm's commitment to prevention of pollution, continuous improvement, and compliance with regulatory and other legal requirements

### **Structure of an EMS Audit**

To perform an EMS audit effectively, auditors develop an audit plan to guide their initial and surveillance audits. Although audit methods vary, the plans typically consist of the audit scope, audit objectives, audit matrix, and audit schedule. The plan also includes such information as the date and location of the audit, the audit team members, reference documents, and confidentiality requirements. Often, the plan is prepared as a matrix, with rows for all the clauses of ISO 14001 and columns for the parts of an operation to be audited (e.g., assembly, pump stations, painting and coating). Depending on organizational size and EMS scope, an auditor's plan can adjust.

The plan grows or shrinks depending on the size or environmental complexity of the client. Environmental complexity and site characteristics include, but are not limited to:

- processes, functions, products, and services
- the number of operations/buildings included in the EMS

- waste management facilities and practices
- air and water pollution sources
- materials and energy used
- chemical storage sites
- age of the site
- underground tanks

At the initial registration audit, the audit team will use a plan that may include some of the following tasks:

- extensive inside and outside tour
- EMS documentation review, an interactive task with the client that covers documentation levels and procedures
- document review for legal and other commitments
- in-depth examination of elements in the audit plan matrix to test how well the EMS adheres to ISO 14001

In addition, auditors look for evidence demonstrating a client's commitment to prevention of pollution, to continual improvement of the EMS, and to compliance with regulatory and other requirements, as well as the client's ability to define and improve continually how it addresses significant environmental aspects, impacts, objectives, and targets.

Auditors usually devise audit plans in conjunction with their clients. Prior to the facility visit, the lead auditor presents the plan to the client and solicits feedback. The client reports any objections to the lead auditor, who is responsible for resolving outstanding issues with the client and securing agreement to revise the audit plan.

The registrars interviewed planned their audits in varied ways. Most viewed variation as a way to distinguish themselves from their competitors. For example, some registrars devise audit plans covering all 17 clauses of the ISO standard during each surveillance audit. Others offer plans that review in-depth a different subset of clauses during each audit.

## **Audit Evidence**

Interviews with an organization's employees are the primary way for an auditor to collect objective audit evidence. Other methods include examination of documents -- such as information required by

laws and regulations -- and visual observation of facility activities and conditions. There is only a finite amount of time to identify what evidence to collect and what questions to ask. To do so efficiently and effectively, an EMS auditor must know how to locate selected pieces of evidence and supporting background documentation. This practice is known as creating an "audit trail."

In some cases, auditors establish these trails upon discovering inconsistent documentation or contradictory employee responses. If an auditor finds a creek bed on a firm's site "and they don't know whether the creek goes to the ocean or to a wash, that sets off an alarm." An auditor will seek to determine whether such questionable anomalies are reflected in the EMS. If they signal a potential weakness in the EMS, the auditor will ask for detailed evidence to verify whether there exists non-conformance with ISO 14001.

The auditor's technical competence and skills come into play when establishing and following audit trails. When reviewing detailed documents, auditors must make judgments on how far and deep their audit trails will go, where they will go, and how indicative they are as a sample of the firm's EMS.

Chapter Five describes how EMS auditors work in the field. Yet, based on the observations of Panel staff, it is clear to the Panel that detailed knowledge of the client's industry, its environmental impacts and aspects, and the elements of ISO 14001 are essential components for an effective audit. Without them, an EMS auditor cannot successfully create, let alone follow, an audit trail of environmental aspects related to a particular industry.

## **Audit Findings**

Auditors recommend to the registrar that an organization be approved for registration or certification upon finding that all portions of the EMS conform to ISO 14001 in all major respects. Upon finding evidence of a flaw in the organization's EMS, the auditor must consider the severity of the problem and report the finding. Although the terminology varies among registrars, auditors generally categorize non-conformances as major or minor.

Most of the auditors interviewed identify major non-conformances as the complete failure of a client's EMS to conform to one or more clauses of ISO 14001. Minor non-conformances refer to adverse findings within a single clause of the standard. Many findings of minor non-conformance detected in a single area of the standard -- such as definition of roles and responsibilities -- can cause the auditor to raise the finding to "major." It may take as many as 25 or 30 minor findings for an auditor to recommend that a client not receive registration. Such circumstances demonstrate the judgment of lead auditors and the audit team.

If an audit team finds non-conformances, whether they are minor or major, it communicates these findings to the client and explains how the findings affect EMS conformance. As one interviewee said, "The thing you can do is to give a client solid information about the nature of the non-conformance, not just five minor findings having to do with document control, but identifying what is the core problem."

In cases of major non-conformances, the organization must implement corrective actions; and the auditors then return after a set interval to see whether the problem has been fixed and its root cause has been addressed. The interval varies by registrar. As discussed, non-conformances detected on previous audits help auditors to determine how to set priorities for subsequent surveillance audits. For these items, auditors develop audit plans designed to see whether the firm has corrected minor non-conformances.

Registrars interviewed for this study follow up on previous audits' findings in various ways. Some registrars give client organizations up to six months to address non-conformances, while others give only 90 days. Some auditors attribute these variations to ANSI-RAB accreditation methods, which do not impose set requirements on how long registrars should give client organizations to correct non-conformances. Rather, ANSI-RAB looks more at whether registrars have demonstrated an appropriate and effective auditing and registration system for monitoring how their clients address non-conformances. Despite allegations that some registrars give certificates when there are major non-conformances, the Panel's research staff have been unable to document such occurrences; and such allegations were not widespread.

## **How Auditors Make Judgments**

EMS auditing is a matter of professional judgment, both in interpreting ISO 14001 and in applying the standard to diverse organizations and circumstances. Although each registrar has guidelines for determining a non-conformance, individual auditors must make these determinations and give clear reasons supporting their judgments. Most auditors make decisions using an unwritten professional yardstick. Upon determining that an organization's EMS does not conform to ISO 14001, the auditor must ask whether other auditors would make the same finding. One interviewee said, "Auditors make judgments all of the time. Auditing is all about judgment. The challenge is do you have objective evidence to support it and would another auditor come to the same conclusion?"

An auditor's judgment is most critical in cases where there is insufficient evidence, either written or based on the auditor's working knowledge of the client, to demonstrate the client's commitment to the EMS. In such cases, the auditors interviewed said that they make a judgment call by weighing such factors as management's commitment to, and understanding of, the EMS and employees' understanding of the EMS. One stated, "You take your samples and follow audit trails. You can look for objective evidence to support what's being said. You go in and accept what they say at face value - - trust but verify. Show me your manifests. It is important to be tough but fair."

Whatever the judgment, the auditor must verify continual improvement in the EMS and look for progress at the next surveillance audit. If the auditor is unable to find sufficient evidence of these factors, a finding of non-conformance may be made.

### Verifying Audit Evidence

During this study, EMS auditors were asked to provide examples of cases where clients deliberately withheld, or tried to withhold, information that could lead to findings of minor or major non-conformances. No one reported such instances. One reason may be the six-month cycle for surveillance auditing that is prevalent throughout the industry. Because most of the auditors interviewed return to their clients every six months, they may be more likely to discover withheld information or hidden problems than would be the case if their visits were less frequent. There is a widely held view among auditors that "you can fool me once, but you can't fool me twice." If auditors do their job properly, errors or lies will be discovered through paper and information trails, performance data, and interviews with staff from various departments.

### **Informal Peer Review**

Checks within the EMS registration system and the audit process help to make sure that auditors have completed all the major steps in the process. One method is for audit team members to crosscheck each other: a team member may record whether the lead auditor has covered all the key steps during the manager meeting or interviews. A second method is for the registrar's audit manager to witness auditors in the field. Registrars' independent advisory boards also review a registrar's audit reports as part of an independent review, and board members complete review forms that provide feedback to the auditor and registrar on audit thoroughness and quality. In addition, most registrars instruct clients to complete and return surveys on auditor performance. These checks do not guarantee a fail-safe system, but they increase the likelihood of catching anomalies.

Although not built into the ISO standard, one feature of the auditing practice has potential for ironing out kinks in the business cycle and providing an additional check on audit uniformity. Many auditors work for registrars on a contract basis and, with the exception of some who sign exclusivity agreements, work for multiple registrars. This experience allows them to see variations among registrars. According to some auditors, registrars sometimes overlook gaps in audit reports. Said one, "Some registrars are not looking at all the information in 14001 and still issue certificates. I can almost categorically guarantee that it does go on."

When pressed for details, however, the auditors interviewed were unable or unwilling to identify these registrars and the information omitted. Instead, they reported that their respective registrars required rigorous and detailed audit reports. Some contractual auditors likely are well-positioned to identify differences among registrars and registration practices, but no process is in place for tapping this source of peer-oriented feedback.

### **Environmental Policy**

ISO 14001 requires firms to include in their EMSs an environmental policy and to ensure management commitment to that policy. The standard defines an environmental policy as a declaration "by the organization of its intentions and principles in relation to its overall environmental performance." As such, it requires a commitment to three principles: compliance, prevention of pollution, and continual improvement of the EMS. Fundamentally, an environmental policy statement is designed to ensure that an organization has the capacity to comply with its permitted environmental performance levels, which depend on the organization's size, vision, services, products, customer demands, and other market influences (Meyers 1999).

As mentioned earlier, the ISO 14004 guidance document advises organizations to begin developing a policy "where they can achieve obvious benefits." Auditors interviewed said they pay close attention during the desk audit and initial on-site audit to see whether clients have developed a reasonable policy. In the view of some auditors interviewed, overly ambitious goals and targets not only increase the likelihood that an organization will fail to reach its goals, but also damage employee morale and commitment to conformance with ISO 14001.

The description and definition of the EMS in the environmental policy also can influence how an auditor evaluates the organization. If a company defines improvement of its environmental management as continual, the auditor reasons that flaws in the EMS will be corrected eventually or that more desirable methods of operation will be implemented when possible to do so. If company policy specifies the improvement as continuous, however, the auditor will expect the organization to implement EMS changes quickly and continuously throughout its operating cycle, not just when time allows and physical or financial conditions are favorable. The difference may seem semantic, but the outcome and subsequent responsibility of the organization are greatly increased by making a commitment to continuous, rather than continual improvement of the EMS.<sup>22</sup>

### **Management Commitment**

ISO 14001 is a management standard, and EMS audits generally begin with the audit team and top company managers meeting to assess the latter's understanding of, and commitment to, ISO 14001.

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<sup>22</sup> The two terms are frequently used interchangeably in public policy. It is assumed in the practice that ISO 14001 specifies continual, not continuous, improvement.

During this meeting, the auditor assesses whether managers are truly committed to successful implementation of the EMS. Among its features, the ISO 14001 standard requires that management:

- understand the standard
- define the organization's environmental policy and ensure that it is appropriate to the nature, scale, and impacts of its activities
- make a commitment to continual improvement and pollution prevention
- commit to complying with regulations and other environmental mandates
- provide a framework for setting and reviewing environmental objectives and targets that are documented and communicated to employees.

The auditors interviewed typically test what managers tell them by posing identical questions to middle management, operational control staff, line workers and, where relevant, contractors. Inconsistent responses can lead an auditor to design and pursue an audit trail. As one auditor said, "Don't watch their mouths. Watch their feet."

### **Environmental Aspects and Impacts**

An organization's ability to identify and address its environmental aspects and impacts is an important feature that auditors use to assess how well an EMS is operating (ISO 14001: 4.3.1).<sup>23</sup> Aspects and impacts are key elements of ISO 14001. They cover both regulated and unregulated environmental activities. If a firm can effectively identify its aspects and impacts, it can implement an EMS that continually improves how well it addresses those aspects.

The interviewed auditors stated that they carefully scrutinize how well organizations identify their aspects and impacts and that organizations sometimes overlook the most important ones. In these instances, auditors seek to refine and strengthen an organization's understanding by asking probing questions to determine why it failed to identify an important aspect or impact.

Although ISO 14001 does not tell an organization which aspects and impacts to identify, it does provide a way to set priorities among them. An organization is required to establish and maintain a procedure for identifying the environmental aspects that it can influence in order to address aspects that have "significant impacts on the environment" (ISO 14001: 4.3.1). Much comes down to the definition of significant impacts because the standard instructs the organization to ensure that aspects related to significant impacts are considered in setting its environmental objectives and targets (ISO 14001: 4.3.1).

Not every environmental aspect has a significant environmental impact, nor does every one require an objective or target for improvement. The capacity to set reasonable priorities is itself important. Thus, auditors seek to discern whether an organization has a system to identify properly its environmental aspects, whether it has addressed the aspects within its control and influence, and whether it has considered aspects with significant environmental impacts in setting its objectives and targets.

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<sup>23</sup> There is some confusion or diversity of opinion among observers about the difference between an environmental aspect and an environmental impact. The ISO standard defines an environmental aspect as an "element of an organization's activities, products or services which can interact with the environment." It defines environmental impact as "any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's activities, products, or services."

## Objectives and Targets

Identifying environmental aspects and impacts can help a company to set objectives and targets for the environmental management of operations and processes.<sup>24</sup> Not all aspects or impacts lead to objectives and targets. However, any significant environmental impact over which the organization has control must be considered when establishing its objectives. Examples include reducing by the year 2000, by 50 percent the amount of chromium reported for the Toxic Release Inventory (TRI) from 1997's baseline amount; reducing the potential for hazardous material spills; reducing consumption of potable water by five percent by 2000; and continuing to eliminate asbestos from the facility.

Objectives and targets can cover impacts regulated by environmental laws, as well as unregulated factors. When EMS auditors look at the objectives and targets, some consider the organization's options for addressing environmental aspects or impacts. Auditors ask such questions as, "How did the firm achieve the targets or why didn't they meet them?" They also may consider external factors affecting whether a firm meets its targets. For example, most will ask, "Were there operational or facility changes since the last audit?"

EMS auditors reported that they try to use quantitative information to assess the extent to which an organization meets its targets and objectives. In the area of non-regulatory aspects, a firm's goal of reducing energy use by five percent from 1995 levels would lead an auditor to check whether such reductions are being made. Unsubstantiated errors or missing data may cause the auditor to find that an organization is not in conformance with the standard.

In combination, a facility's aspects, impacts, objectives, and targets become measures that auditors use to test how well the firm is meeting its environmental policy commitments. These commitments include regulatory compliance, continual improvement, prevention of pollution, and adherence to ISO 14001.

## Summary

Generally, registrars register a client's EMS conformance under ISO 14001 in a way that is similar to the procedure by which ANSI-RAB accredits the auditor's own competence to register under the standard. EMS audits are organized into two stages, with four to five main steps. Guide 66 characterizes the application and desk audit as Stage One and the on-site registration audit as Stage Two. Audit steps include application, documentation review or desk audit, on-site registration audit, and surveillance audits. Auditors use on-site audits to determine whether a firm's EMS conforms to ISO 14001. Auditors later use surveillance audits to test the EMS in practice and to make sure that it still adheres to the standard and is improving over time. The surveillance process ensures that all elements of ISO 14001 are audited during the three-year cycle.

There is some variation in the requirements that EMS auditors review to determine conformity with the standard. One is audit scope, which serves to guarantee that an EMS captures environmental aspects of an organization's activities, products, and services.

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<sup>24</sup> ISO 14001 defines an environmental objective as an overall environmental goal, arising from the environmental policy, that an organization sets for itself to achieve and that is quantified where practicable. The standard defines an environmental target as a detailed performance requirement quantified where practicable, applicable to the organization or parts thereof, that arises from the environmental objectives and that needs to be set and met in order to achieve those objectives (ISO 14001: 4.3.3).

All auditors interviewed for this study appear to rely on some method to determine the scope of an organization's EMS and the areas that the EMS registration will cover. Yet there is potential for lack of uniformity among them. Audit scope, the total number of employees, and an organization's environmental impacts all influence the number of audit days needed to conduct initial and surveillance audits.

Many of the registrars interviewed for this study offer readiness reviews or pre-assessment audits to determine a firm's ability to develop and implement an EMS and, since October 2000, pre-assessment site visits are now mandated by ANSI-RAB. Some observers are concerned that pre-assessments can enhance a client's success in obtaining registration. Yet ANSI-RAB has strict guidance prohibiting EMS registrars and their auditors from providing advice or consulting services for the design or implementation of a client's EMS. Further, none of the registrars or auditors interviewed reported that pre-assessment audits guarantee a successful outcome. Most said these steps are a way for registrars and auditors to work with clients and improve their planning for the registration audit.

Following an organization's registration, most registrars participating in this study send auditors back to an organization every six months to audit portions of the EMS. Registrars also undertake quarterly reviews in rare cases. Because surveillance audits give auditors the opportunity to examine specific portions of the EMS and to track those components over time, they can be one of the most important features of third-party registration. ISO 14001 requires that auditors base their EMS audits on the environmental importance of the activity and the results of previous audits. The auditors interviewed use prioritization methods to prepare for surveillance audits, which they initiate by asking about conditions that have changed since their last visit.

Registrars devise audit plans for both initial and surveillance audits. The plans typically appear in matrix form with clauses from the standard and areas to be covered. The registrars interviewed planned audits in different ways. Most viewed variation as a way to distinguish themselves from their competitors. For example, some registrars devise audit plans covering all 17 clauses of ISO 14001 during each surveillance audit. Others offer plans that review in-depth a different subset of the clauses during each audit.

To determine whether an EMS conforms to ISO 14001, EMS auditors collect objective evidence. Those interviewed collect such evidence through interviews and increasingly detailed document reviews. This audit trail is one method to develop chains of evidence. Several observers question whether EMS auditors without sector-specific experience have adequate training and the background necessary to create audit trails. It is difficult to imagine how an inexperienced auditor could successfully create, let alone follow, the chain of evidence necessary to assess the conformity of an EMS with the standard.

EMS auditors seek to develop as much objective evidence as possible, but EMS auditing ultimately is a matter of professional judgment, both in interpreting the standard and applying it to diverse organizations and circumstances. In such cases, the auditors interviewed said that when making a judgment call, they weigh such factors as management's commitment to the EMS and employees' understanding of the EMS.

None of the auditors participating in this study reported instances when clients deliberately withheld information. One reason may be the prevalent use of the six-month surveillance auditing cycle. Because most of the auditors interviewed return to their clients every six months, they may be more likely to discover withheld information or hidden problems than would be the case with less frequent

visits. To ensure the integrity of the system, auditors monitor each other, and registrars periodically monitor auditors. Informal peer review is also enhanced because many registrars use auditors on a contract basis, rather than hiring them as full-time employees.

Management's commitment to the EMS, as well as the environment aspects, impacts, objectives, and targets, are several important elements that auditors examine. Aspects, impacts, objectives, and targets become measures auditors can use to test how well a firm is meeting its environmental policy commitments, including regulatory compliance, continual improvement, prevention of pollution, and adherence to the standard.

## **PANEL RECOMMENDATIONS**

### **❖ More Guidance Is Needed on Auditor Independence During Pre-Assessment Audits**

- Pre-assessment audits represent an important mechanism to prepare for the second-stage registration audit. There is unavoidable risk, however, that such pre-assessment audits could erode the independence of EMS auditors in some cases or even cross the line into consulting services.
- Clear guidance on this issue should be provided and careful attention should be paid during ANSI-RAB's accreditation audits of registrars in order to maintain appropriate practices and auditor independence.

### **❖ More Guidance Is Needed on Adding Value during Registration and Surveillance Audits**

- In addition to pre-assessment audits, some registrars and auditors believe that they should add value by communicating with clients about best practices observed elsewhere or by pointing out areas for improvement.
  - Others state that the audit process adds sufficient and appropriate value by asking thoughtful and probing questions, examining evidence about potential non-conformance situations, and evaluating the adequacy of the organization's proposed solutions.
  - Still other auditors believe that they should merely approve the minimal conformance of the registration applicant's paper trail for each of the ISO 14001 elements.
  - Some auditors and their client businesses, perhaps the most optimistic of them, see auditing as an ongoing and constructive dialogue between the managers and staff of a business and a knowledgeable third party who acts as a skeptical questioner. In this way, the EMS auditor continually helps to identify and narrow gaps between stated environmental management goals and actual practices.
- ANSI-RAB, U.S. TAG, and CASCO should develop additional guidance on the value and limits to third-party EMS auditing and registration. The guidance should address the appropriate level of feedback for registrars to give to registration applicants on best practices, areas for improvement, and root-cause analysis for correcting and preventing recurrent non-conformances. This should be done without engaging in prohibited consulting relationships or creating conflicts of interest.

### ❖ **More Attention To Pre-Audit Planning Is Required**

- In its accreditation and subsequent audits of ISO 14001 registrars, ANSI-RAB should assure that registrars' pre-audit planning, scoping, and costing procedures are sufficient to provide a basis for registration decisions, with attention to:
  - The amount and type of client information required to prepare a proposed contract/bid and audit plan for registration and auditing services.
  - The preparation time and staff activities needed for audit planning and for determining the number of on-site audit days.
  - The information and criteria used to evaluate the appropriateness of resource requirements for the EMS audit.
  - The information and criteria used to design the audit and to specify appropriate audit team competencies for a particular audit.
  - The information and criteria used to determine auditing needs beyond the specific facility site, such as to verify off-site waste disposal, cross-check material statements involving off-site contractors, and evaluate statements concerning the organization's consideration of external stakeholders' views.
- ANSI-RAB or the registrars' professional trade associations should develop a guidance template for exchanging pre-audit information based on best practices.

### ❖ **Surveillance Audits and Assessments of Continual EMS Improvement Need More Attention**

- According to most of the EMS auditors interviewed for this study, surveillance audits are one of the most important ways to assess continual improvement of an EMS.
- In its accreditation and subsequent audits of ISO 14001 registrars, ANSI-RAB should pay careful attention to registrars' procedures for surveillance audits, especially:
  - The criteria used to design the audits and whether such criteria are adequate to assure continual conformance to ISO 14001.
  - The apparent widespread use of contract auditors, rather than full-time registrar employees, and whether the use of contract auditors has implications for continuity and continual improvement of the EMS from audit to audit.

### ❖ **Auditors Should Document All Judgments That Lead to Findings**

- EMS auditing requires that auditors exercise judgment, both in finding major and minor non-conformances and in making an overall finding as to whether an organization should be registered.

- Registrars should require auditors to document the basis for all of their findings and the basis for judgments on individual major and minor non-conformances.
- Auditable documentation also is needed to support an auditor's subsequent overall assessment of an EMS. Such documentation should provide the basis for the recommendation for or against registration.

## CHAPTER FIVE

### HOW EMS AUDITORS LOOK FOR COMMITMENT TO COMPLIANCE, PREVENTION OF POLLUTION, AND CONTINUAL IMPROVEMENT OF AN EMS

ISO 14001 requires implementing organizations to make at least three policy commitments: to compliance, prevention of pollution, and continual improvement. The standard's definition of these commitments in turn influences how auditors assess whether an EMS conforms to ISO 14001. This chapter summarizes the results of three site visits that illustrate how third-party auditors assess whether firms are fulfilling their policy commitments.

ISO 14001's intent and definition with regard to "commitment to compliance" are relatively straightforward. Organizations are required to commit to compliance with all applicable laws and regulations as well as other mandates, such as sectoral codes, to which they have voluntarily agreed. At the same time, the standard defines "prevention of pollution" very broadly, allowing companies "flexibility in interpreting the kinds of pollution methods they can use to fulfill these requirements" (Tibor and Feldman 1996). As a result, ISO 14001 does not place a premium on source reduction over pollution control methods, unlike the general practice of pollution prevention under EPA's definition in the United States.

What is meant by "continual improvement" also can create different expectations about what ISO 14001 and the practice of EMS auditing is designed to deliver. Some would like to believe that it requires improvements in environmental performance, but the standard simply requires continual improvement of an organization's EMS.

Panel staff accompanied EMS auditors on three audit visits to gain an illustrative understanding of how they are conducted and what issues arise during them. Overall, the audits appeared to be rigorous and thorough with regard to how the lead auditors and team members assessed the organizations' commitments to their EMS goals.

The environmental objectives of all three organizations dealt with both regulated and unregulated environmental aspects and impacts. For example, one of an aerospace firm's objectives was to reduce chromium emissions reported to the Toxics Release Inventory by 50 percent from 1997 levels. An objective of the wastewater facility was to reduce its landfill contribution, potable water use, and electric energy use by 5 percent. The electronics facility's objectives included reducing water consumption by 45 percent in three years (Table 5-1).

**Table 5-1. The Organizations and Some of Their ISO 14001 Objective**

<b>Aerospace</b>	<b>Electronics</b>	<b>Wastewater Treatment</b>
Reduce chromium reported to the Toxics Release Inventory (TRI) by 50%	Reduce water consumption 45 percent in three years	Reduce landfill contribution, water and energy use by 5%

The three registrars conducting these three EMS audits included two of the largest U.S. registrars and one medium-sized registrar, measured by numbers of certificates issued. Two firms were founded more than 100 years ago to insure ships, and one was established a century ago to

undertake conformity assessment. All three have launched EMS auditing activities as a newer business line in response to the development of the ISO 14001 standard. ANSI-RAB accredited two registrars, and the other was in the process of obtaining accreditation.

The aerospace and wastewater facilities received their EMS certifications in 1999. Auditors have returned to each facility to conduct surveillance audits every six months. The aerospace firm had a surveillance audit, which was the lead auditor's third visit. The wastewater site visit was the lead auditor's fourth surveillance audit. In addition to auditing the site for conformity with ISO 14001, the auditor at the wastewater site was auditing the facility under a new, voluntary initiative targeted at wastewater facilities. In contrast, the electronics site represented the team's initial registration audit. Its purpose was to establish whether the EMS met the ISO 14001 standard and operated as planned. For this initial audit, auditors examined the entire EMS, not in-depth aspects of the standard and the facility as customary with a six-month surveillance cycle. The organizations' characteristics are depicted in Table 5-2.

**Table 5-2. Organization Characteristics**

<b>Industry</b>	<b>Aerospace</b>	<b>Electronics</b>	<b>Wastewater</b>
<b>Number of Employees</b>	10,443	450 at any one time	40-50 per site (some stations automated)
<b>Facility Area Audited</b>	Assembly Painting operations ESH Office Fuel transfer Product engineering Vehicle maintenance	Entire facility	Biosolids facility Wastewater plant Pump station Operations and control

Table 5-3 highlights characteristics of the registrars and their auditors. Two-person audit teams evaluated the aerospace and electronics facilities, and one lead auditor focused on the smaller wastewater facility. The auditors for the electronics facility were under contract to the registrar, while the other auditors were full-time registrar personnel.

**Table 5-3. Registrar and Lead Auditor Characteristics**

	<b>Registrar A</b>	<b>Registrar B</b>	<b>Registrar C</b>
<b>Organization</b>	Aerospace facility	Electronics facility	Wastewater
<b>Registrar Market Share</b>	Among top 8	Among top 8	Among medium 8
<b>Type of Audit</b>	Surveillance	Initial with no pre-assessment audit	Surveillance
<b>Audit Team Size</b>	Lead auditor and auditor	Lead auditor and auditor	Lead auditor
<b>Lead Auditor Experience in Industry</b>	15+ years	15+ years	15+ years
<b>Lead Auditor Background</b>	Mechanical engineering	Chemical and oil and gas industry	Engineering and wastewater operations
<b>Employment</b>	Registrar employee	Contract auditor	Registrar employee

Regarding background and training, each lead auditor possessed at least 15 years of experience in their respective fields. Several held advanced degrees in engineering or environmental compliance. The lead auditor at the aerospace firm was a mechanical engineer who preferred to conduct ISO 9000 audits. The lead and assistant auditors at the electronics facility had previously worked in the chemical and oil and gas industries, and the lead auditor had a background in environmental compliance auditing. The wastewater facility's auditor had a background in engineering and extensive training in wastewater management and environmental compliance.

Table 5-4 shows the plant areas covered by each audit and the elements of the EMS standard audited. Registrars interviewed said they used slightly different methods for developing their audit plans. Some registrars audited most or all of 17 clauses in ISO 14001, but others audited in-depth only five or six elements so that all elements of the standard would be audited over a three-year time period. For these three facilities, registrars A and B developed audit plans that included all 17 clauses. Registrar C developed one that required the lead auditor to examine six elements in-depth. Despite the variations in audit plans, all three audits - initial and surveillance - lasted two and a half days. The surveillance audit at the wastewater facility took one and one half days. The additional day was spent auditing the facility to the new voluntary standard for wastewater facilities.

**Table 5-4. Comparison of Audit Plans**

	<b>Registrar A</b>	<b>Registrar B</b>	<b>Registrar C</b>
<b>Industry</b>	Aerospace	Electronics	Wastewater
<b>Facility Area Audited</b>	Assembly Painting operations ESH Office Fuel transfer Product engineering Vehicle maintenance	Entire facility	Biosolids facility Wastewater plant Pump station Operations and control
<b>Element Audited</b>	<b>4.2 Environmental policy</b> 4.3.1 Environmental aspects <b>4.3.2 Legal and other requirements</b> <b>4.3.3 Objectives and targets</b> 4.3.4 Environmental programs 4.4.1 Structure and responsibility 4.4.2 Training, awareness 4.4.4 Environmental systems management 4.4.5 Document control 4.4.6 Operational control 4.4.7 Emergency Preparedness <b>4.5.1 Monitor &amp; Measurement</b> <b>4.5.2 Nonconformance, corrective &amp; preventative action</b> 4.5.3 Records	<b>4.2 Environmental policy</b> 4.3.1 Environmental aspects <b>4.3.2 Legal and other requirements</b> <b>4.3.3 Objectives and targets</b> 4.3.4 Environmental programs 4.4.1 Structure and responsibility 4.4.2 Training, awareness 4.4.3 Communications 4.4.4 Environmental systems management 4.4.5 Document control 4.4.7 Emergency Preparedness 4.5.3 Records 4.4.6 Operational control <b>4.5.1 Monitor &amp; Measurement</b> 4.5.2 Nonconformance, corrective & preventative action 4.5.4 EMS audit 4.6 Management review	<b>4.3.2 Legal and other requirements</b> 4.3.4 Environmental programs 4.4.6 Operational control 4.4.7 Emergency Preparedness <b>4.5.2 Nonconformance, corrective &amp; preventative action</b> 4.6 Management review

Audit team size, not variation in audit days, illustrates the issue of audit-days for all three sites. Even for an initial certification audit of a 450-employee electronics firm -- which has air, water, hazardous waste and toxic chemicals activities -- the team was two people, translating into five audit-person days. Similarly, the audit team conducting the aerospace surveillance audit was also composed of two auditors. One may expect audit teams to have more members, but adding to them means increasing the number of person days required to conduct the audit, and therefore the costs to the clients.

## **Auditing the System for Regulatory Compliance**

In theory, EMS audits can reduce the likelihood of compliance problems by ensuring that an EMS is in place for enabling a facility to take preventative or corrective actions. To conform to ISO 14001, an organization must commit to regulatory compliance and must develop proper elements of an EMS to assess compliance. Regulatory non-compliance may be insufficient alone, however, to signal that a firm's EMS fails to conform to ISO 14001.

A frequent criticism of ISO 14001 is that an organization may be out of compliance with regulatory requirements, but still in conformance with the standard. Although the standard promotes compliance, EMS audits -- unlike compliance audits -- are designed to promote conformity only with ISO 14001's requirements for EMSs. That is, the EMS must promote continual improvement in compliance, but the organization does not necessarily have to be in total compliance at the time it receives registration. Nor does the EMS auditor have to verify that the organization is in compliance with all regulatory requirements.

The operations of the three organizations and registrars auditing them varied considerably. The electronics and aerospace facilities manufacture individual components, while the wastewater treatment plant produces clean water. Similarly, the registrars and auditors varied in terms of firm size and methods used to conduct audits.

Table 5-4 highlights in bold the clauses of ISO 14001 used most frequently to evaluate the three organizations' commitment to compliance. Three audit teams primarily used Clause 4.3.2, "Legal and Other Requirements" to evaluate EMSs for compliance.<sup>25</sup> Each team reviewed regulatory and other documents and asked employees to demonstrate their understanding of applicable regulations and documentation procedures. Auditors asked personnel charged with ISO 14001 coordination to show them such documents as inspection logs, permits, guidance manuals, and internal compliance audit findings. Auditors did not cover the universe of applicable laws and regulations, but only those most relevant to the specific process or operation under review.

Auditors at the aerospace facility spent the second audit day reviewing compliance audit reports and paying particular attention to problems, data inconsistencies, and violations. They typically began with the most general documents, such as inspection or transportation logs, and then focused on problems and violations, narrowing the scope of the analysis to one or two data points. After doing so, the auditors asked employees to produce a chain of detailed documentation.

In the case of the wastewater treatment plant, the auditor spent the first day focusing on a biosolids facility where nonhazardous waste was converted to material to be sent to a landfill or applied by farmers to fertilize non-edible crops. Here, the auditor asked to see EPA guidance

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<sup>25</sup> Compliance-related considerations are also embedded in other clauses throughout ISO 14001, such as consideration of significant aspects, objectives, and targets (Clauses 4.3.1 and 4.3.3), EMS implementation (Clauses 4.3.4, 4.4.6, and 4.5.1), training (Clause 4.4.1), corrective and preventive actions (Clause 4.5.2), reporting (Clause 4.6), and record keeping (Clause 4.5.3).

documents, plant shipment logs, and waste manifests governing offsite shipments and application to cropland of the nutrient material.

On the second day, the auditor traveled to the plant that treated wastewater before pumping it out to sea. On the drive into the plant, which was undergoing significant upgrades, plant personnel asked the auditor to don a hardhat and use caution as she maneuvered detours and construction barriers. The auditor took detailed mental notes of conditions that could affect EMS performance and later asked the plant's environmental coordinator to produce operations documents.

The auditor opened her meeting with the plant's environmental coordinator by asking whether any new developments had taken place that could affect compliance and environmental performance. The coordinator responded that the construction crews were digging a new pipeline to supply a new boiler. As it turned out, the pipeline contained a plastic liner that broke down when exposed to high water temperatures from the boiler process. Had the auditor failed to observe construction activities or ask the coordinator about them, she might have overlooked an important feature that would have implications for the plant's compliance with air regulations.

For the next two hours, the auditor asked the coordinator an increasingly detailed series of questions, starting with the plant real and simulated emergency response procedures for personnel and on-site construction contractors. The auditor later initiated a review of legal documents, including air permits, which the plant had identified as a significant aspect under ISO 14001.

As she reviewed legal requirements, the auditor requested a log that itemized the results of internal compliance audits conducted by the facility's environmental monitoring and testing unit. The auditor scanned it to identify corrective actions recommended as a result of the internal audits. Narrowing the scope of analysis, the auditor focused on internal compliance audit findings that plant personnel had not yet addressed, closed, or verified.

Upon request, the environmental coordinator produced a binder that detailed each compliance audit finding. The auditor pulled binders related to air emissions from one of the plant's four industrial boilers. In doing so, she noted that the date stamp on the air permit governing the boiler had expired. As it turned out, the permit expired because the plant was unable to bring a new boiler online due to pipe liner problems. "We got a variance from the local air board," the environmental coordinator explained.

Also upon request, the environmental coordinator provided a three-inch binder containing all air permits that governed facility emissions. The auditor thumbed through them to find the variance in question and noticed that emissions from another industrial boiler were higher than the two others, albeit within permitted levels. "What's happening with boiler number three?" the auditor asked. "We tried to balance emissions from the new boiler that was shut down, but we ended up going over a little bit," the employee responded. Unsatisfied, the auditor asked to review monthly reports from the plant's environmental testing division specifying how the problems should be addressed. The employee produced the reports, which recommended that the plant conduct source tests on the boilers.

The auditor asked, "Do you have any documentation that shows me the results of the source test?" The plant employee produced electronic mail correspondence with the environmental testing unit. According to the correspondence, source tests showed that boiler emissions were within permitted levels. Later that day, the auditor visited the two boilers and posed the same questions to plant operators in charge of the process.

As these examples show, an EMS audit does not verify full compliance with every applicable regulatory requirement. Auditors may rely on results from internal environmental audits and compliance audits to guide them in examining how well an EMS addresses compliance issues. A registrar may register an organization despite observed legal non-compliances, if the EMS addresses them and if, in aggregate, they do not indicate EMS failure. To make this determination, EMS auditors use a sampling technique focusing on the regulatory requirements most applicable to the facility or process. They then look for indicators, such as internal environmental audit requests or compliance audit findings, to provide objective evidence that the EMS is effective for correcting non-compliances and preventing future recurrences.

EMS auditors focus on problems or deviations in narrowing their scope of analysis. If problems exist, plant personnel are asked a series of increasingly detailed questions and are to provide detailed documentation upon request. If plant staff are unable to answer questions satisfactorily or produce the right paperwork, the auditor may find that the EMS fails to conform to ISO 14001. The auditor will classify the finding as "major" or "minor," depending on objective evidence and professional judgment.

These examples also suggest that auditors seek as much objective evidence as possible to assess how well an EMS addresses regulatory compliance issues. Subjectivity enters into the process when employees are unable to provide correct responses or sufficient supporting documentation. At times, this results from an inadequate EMS, which is a "major" nonconformance. Yet industrial facilities are dynamic places where any number of factors -- power failures, pipe lining failures, personnel changes and shift changes -- can affect the quantity and quality of objective information that an auditor is able to elicit.

At the wastewater facility, for instance, on the first day of the audit the local energy supplier instituted a rolling blackout. Such an event normally would not cause power loss because the plant generates its own electricity. On this day, however, the surge caused a switching device to fail; and plant operators spent an entire shift bypassing computer controls to keep the facility -- and the sewage systems in the surrounding metropolitan area -- up and running.

An EMS auditor usually interviews operational staff to verify management responses and test how well they understand the EMS, a requirement of Clause 4.4.2 on Training and Awareness. Because plant operators were preoccupied with getting operations up and running, the auditor was unable to elicit as many detailed and thoughtful responses to questions regarding plant environmental policy as hoped. As a result, the auditor used default information to supplement responses from preoccupied operational staff, including information gleaned from previous audits of the facility, her knowledge of comparable facilities and their EMSs, and management's commitment to ISO 14001. That the audit fell on this day also revealed information about how

the facility responds to unanticipated technological failures, not merely normal operating conditions.

### **Continual Improvement and Prevention of Pollution**

ISO 14001 instructs auditors how to examine an EMS for regulatory compliance systems in a straightforward way. Yet, in such areas as prevention of pollution and continual improvement, the standard is intentionally ambiguous. Such ambiguity raises questions about how far ANSI-RAB can go, even with the best of intentions, toward assuring uniformity of interpretation among registrars and auditors.

ISO 14001's architects deliberately designed the standard and its supporting guidance on prevention of pollution in such a way as to refrain from prescribing what specific actions constitute the term. Indeed, the phrase "prevention of pollution" is intentionally different from "pollution prevention," particularly as the latter is defined and applied in the United States.

According to one author, "Continual improvement and prevention of pollution are areas where there exists a deep chasm between various ISO 14001 Technical Committee (TC) national authors" (Burdick 2000). European delegations sought to measure environmental improvement in terms of reduced environmental impacts created, such as reduced toxic pollutants. The U.S. delegation, however, argued that continual improvement should be measured only with respect to enhancements in system performance itself.

If a national accreditation body such as ANSI-RAB were to propose specific interpretive guidance on the meaning and expectations associated with these terms, even for the purpose of assuring greater uniformity of interpretation among registrars, it would likely encounter criticism that it went beyond the language of the standard and thus itself became non-conformant. Thus, it remains unclear how auditors should measure progress in preventing pollution, except on an ad hoc basis for each client facility, against the baselines created from one surveillance audit to the next. As one auditor said, "I know EPA would like companies to show improvement in environmental performance, but the standard only requires that the EMS improve over time."

### **Auditing the EMS for Prevention of Pollution**

ISO 14001 requires organizations to commit to prevention of pollution but does not specify how they should achieve it. The standard defines it as the "use of processes, practices, materials, or products that avoid, reduce, or control pollution, which may include recycling, treatment, process changes, control mechanisms, efficient use of resources and material substitution." As some have observed, "This broad definition offers companies and nations around the world flexibility in the types of pollution methods they can use to fulfill these requirements" (Tibor and Feldman 1996).

As others have pointed out, however, one result of such a broad definition is that "the standard does not require a firm to place a preference on source reduction over end-of-pipe treatment in

preventing pollution” (Switzer and Ehrenfeld 1999). Accordingly, under ISO 14001, what a facility considers prevention of pollution may not match what an environmental advocacy group believes it to be.

In this context, EMS auditors assess an organization’s commitment to prevention of pollution primarily on a case-by-case basis, relative to the targets and objectives that the firm itself sets in its EMS. To illustrate, one should consider the divergent objectives among the three firms visited. The wastewater treatment plant sought to reduce its use of “miscellaneous chemicals” -- mostly cans of vendor-supplied paint thinners, coatings, and solvents -- around the plant, while the aerospace facility sought to reduce the use of chromium emissions reported to EPA's Toxics Release Inventory.

An environmental advocate or environmental regulator might consider the aerospace facility's commitment to prevention far more ambitious than the wastewater treatment plant's pledge. Yet the EMS auditor does not consider how ambitious one facility is in its reduction targets as compared with another. Rather, the auditor determines whether a specific facility is doing what it claims and ascertains how it monitors and verifies actual documented progress. As such, attention is paid to whether reductions are being made and whether training, operational practices, measurement, and monitoring methods support the objective. Moreover, auditors examine whether goals are expressed and measured in terms that are communicated effectively to employees and other potentially interested parties.

For example, auditors at the electronics facility found that it had failed to define adequately how it would fulfill the objective of reducing the cost and generation of hazardous waste by 10 percent over three years. Auditors checked for commitment to prevention of pollution by reviewing the plant's containment methods, chemical control, and handling procedures during the initial facility walk-through and later while reviewing records of chemical use, spills, and employee training. Perhaps most importantly, auditors tested employees’ pollution prevention knowledge.

During her initial walk through at the electronics facility, the auditor asked employees whether they knew or understood what prevention of pollution meant, how reductions were measured, and how prevention principles affected their day-to-day line jobs. She discovered that the plant had failed to spell out adequately what units it was using to measure hazardous waste reduction. The plant's objective was stated in relative terms (i.e., 10 percent of current levels in three years), but plant operators charged with reduction told auditors that they measured reductions in absolute measures (i.e., tons per year). To support her finding, the auditor noted that the measurement terms provided an inadequate measurement of pollution reductions and failed to communicate the plant's progress to concerned individuals and employees as required by Clause 4.4.3 of the standard.

### **Auditing the EMS for Continual Improvement**

Related closely to the idea of prevention of pollution is the concept of continual improvement, which some call the “heart of the ISO 14001 standard” (Switzer and Ehrenfeld 1999). The

standard defines it as “the process of enhancing the EMS to achieve improvements in overall performance, in line with the organization's environmental policy” (ISO 14001, 3.1). Organizations may demonstrate continual improvement through achieving ever more stringent objectives, broadening the scope of their EMS, or reducing or enhancing the efficiency of environmental management. An organization that fails to demonstrate continual improvement of its EMS does not conform with the standard.

By definition, continual improvement implies a temporal process in which measurable changes occur over time. Generally, EMS auditors hold companies to this commitment by conducting surveillance audits to see that the firms are addressing issues uncovered in previous audits, setting increasingly ambitious objectives, and demonstrating efforts to meet them.

The objectives of the three organizations reflected these aims to varying degrees. For example, the wastewater treatment plant expanded its set of objectives in 2001 by adopting an ancillary standard designed by EPA and several national public interest groups, geared specifically for wastewater treatment facilities. The supplemental standard built upon ISO 14001 requirements by including more rigorous public outreach requirements than those contained in ISO 14001 and by imposing specific new commitments for wastewater processes.

After management explained provisions of the new objective and how it planned to achieve them, the auditor asked, “If I ask employees as I go through this audit about the new objective will they know what it means?” Management replied that all employees had recently been trained in the supplemental standard and that they would be able to explain such facets as how the requirements improved upon ISO 14001's public outreach provisions. In subsequent visits, the EMS auditors expect to inquire whether employees understand the new objective and whether there is documentation showing how the firm is meeting it.

In contrast to the wastewater and aerospace facilities, both of which committed to continual improvement, the electronics facility committed to self-imposed “continuous environmental improvement.” As opposed to making improvements in the EMS over time as implied by continual improvement, auditors at the electronics facility found that the firm failed to document sufficiently how it would improve its EMS continuously, *i.e.*, all the time. This discrepancy produced a second minor audit finding regarding the firm's record-keeping procedures. Although this finding did not prevent registration to ISO 14001, auditors would require evidence within six weeks and on subsequent surveillance audits that the firm took steps to address this discrepancy.

## **Summary**

ISO 14001 requires that an organization make commitments to compliance with all legal and regulatory requirements, to prevention of pollution, and to continual improvement of the EMS. Despite variations in the facilities audited and the registrars auditing them, auditors assessed how organizations were meeting their policy commitments in similar ways. In part, this similarity is probably driven by the same clauses and ambiguities in ISO 14001.

Assessing compliance appears to be the most straightforward commitment. The auditor may or may not have the expertise to form a definitive legal judgment on a facility's compliance, but he

or she must render a professional opinion whether its management systems and procedures appear to be functioning effectively to assure compliance, identify and promptly correct any non-compliance, and prevent recurrences. EMS auditors at these three facilities did not consider whether a firm was in compliance with regulations, but they focused on whether its EMS was set up to identify and address potential or actual compliance issues.

Assessing prevention of pollution and continual improvement was less straightforward. Primarily, the EMS auditors participating in this study assessed an organization's commitment to prevention of pollution by auditing against the organization's own goals, objectives, and targets. Contrary to some observers' views, auditors also interpreted continual improvement as referring to the organization's EMS, not to continual improvement in an organization's environmental performance. However, EMS improvement ostensibly would be demonstrated by enhanced environmental performance.

## **PANEL RECOMMENDATIONS**

### **❖ Registrars and Auditors Should Assure Substantive Conformity to ISO 14001**

- Many U.S. registrars and auditors interpret their responsibility as assuring that clients are meeting their self-selected objectives and targets. Others use a broader interpretation of criteria for determining conformance with ISO 14001.
- ISO 14001 requires that a conforming EMS must have certain specified elements, including commitments to comply with all applicable legal and regulatory requirements, to prevention of pollution, and to continual improvement of an EMS. EMS registrars and auditors should audit an EMS against these requirements, not merely against the audited organization's own goals, objectives, and targets. In short, an auditor must make a reasoned judgment whether an organization is doing what it claims and whether its actions satisfy the requirements of ISO 14001.
- The ISO 14001 standard contains deliberate ambiguity on what constitutes prevention of pollution. Additionally, continual improvement is defined as referring to improving an organization's EMS, not its environmental performance. These ambiguities create uncertainty about how auditors should apply objective criteria and whether conformity assessments should be conducted uniformly for all organizations that apply for EMS registration.
  - Although ANSI-RAB and the U.S. TAG do not have authority to modify ISO 14001, they should call attention to the need for ISO 14001 to define more explicitly and interpret more clearly what constitutes continual EMS improvement and prevention of pollution.
  - Future revisions of ISO 14001 should consider such issues as how auditors should determine what pace of continual improvement in an EMS is sufficient to warrant registration.

- In the absence of any change to ISO 14001, auditors should examine whether the audited organization has shown adequate evidence that it has systematically considered reasonable options for prevention of pollution.

## CHAPTER SIX

### IS THE REGISTRATION SYSTEM MEETING THE EXPECTATIONS OF CLIENT ORGANIZATIONS?

Most companies and public agencies interviewed said they use third-party EMS certification for internal reasons, rather than to receive public recognition or to satisfy parent firms or companies they supply. However, supply-chain management increasingly is a factor in EMS adoption. Appendix A describes how the 11 organizations participating in this study were selected. Ten used accredited third parties to register their EMS to ISO 14001. The other one decided to self-certify until it had more evidence that the benefits of third-party certification were worth the costs.

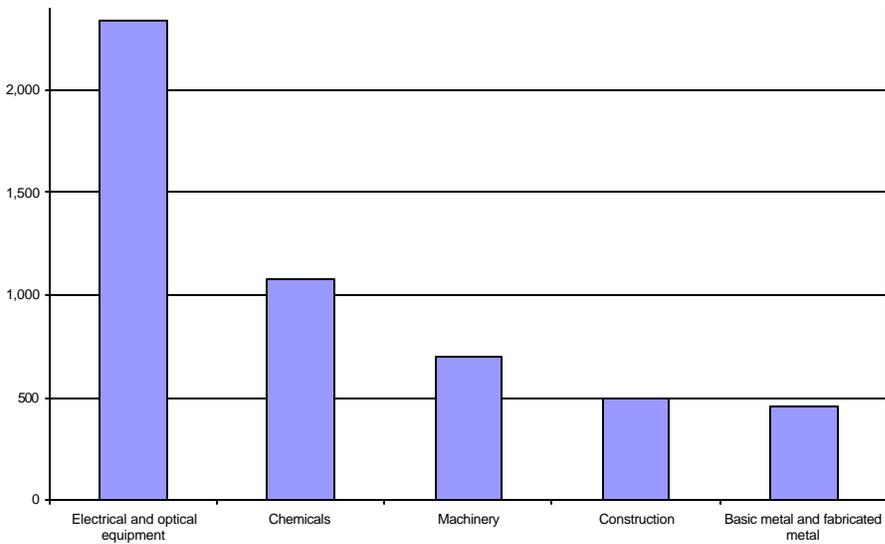
Contrary to some registrars' claims, all ten organizations reported that cost was not an important consideration when choosing a registrar. Most valued auditor experience in their specific line of business. Only one organization -- a firm whose parent company required it to adopt the standard -- stated that the costs of using third parties were not worth the benefit.

#### **Organization Characteristics**

The organizations participating in this study were primarily large and medium-sized firms, as measured by the U.S. Department of Commerce. Using its criteria for this sample, large companies are multinational, multi-facility firms with more than 500 employees; and medium-sized companies ranged between 100 and 500 employees. Finding small firms with fewer than 20 employees to participate in this study proved challenging.<sup>26</sup> This may be attributable to larger firms having greater relative resources, managerial benefits, and business interests in adopting and registering their EMSs. Some interviewees stated that low rates of ISO 14001 adoption by small and medium-sized businesses are fueled by the composition of such committees as U.S. TAG, which provides technical interpretation of the standard. Although some small and medium-sized enterprises participate in the U.S. TAG, other interviewees believed that the group could make stronger efforts to involve these organizations more directly.

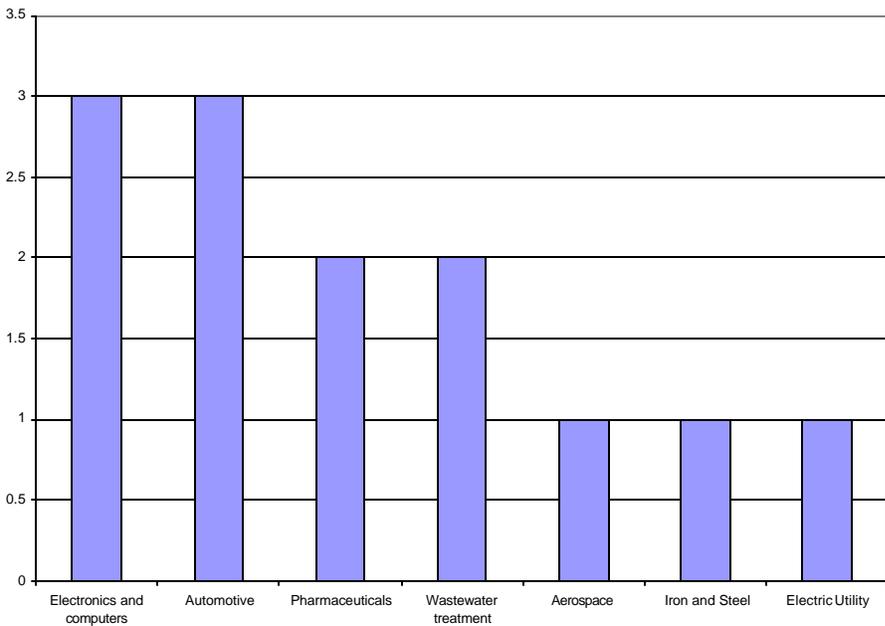
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<sup>26</sup> Panel staff contacted three registrars, and two of them operated not-for-profit divisions devoted to recruiting and registering small firms. One, a state agency, reported that no small firms had yet approached it to perform ISO 14001 registrations.



**Figure 6-1. 14001 Number of Certificates by Industrial Sector**

Source: International Environmental Management Systems Update. "ISO 14001 Registrations -- North America." CEEM Inc., 2000.



**Figure 6-2. Number of Organizations That Participated in the Academy Study, by Sector**

Note: The industry sector categories used here differ slightly from those reported by CEEM. For example, the U.S. Department of Commerce considers pharmaceuticals as part of the chemical industry. Automotive and aerospace correspond roughly with CEEM's "machinery" category. Iron and steel correspond with CEEM's fabricated metal category.

The cross-section of organizations represented in this study is fairly consistent with the overall population of ISO 14001 firms. Figure 6-1 provides 1999 data on certificates by industrial sector

in North America. It shows that certificates issued to the electronics firms sector were more than double those for the next highest category, chemicals and chemical products. The Academy Panel tried to recruit firms for this study based roughly on the same proportions.

Figure 6-2 shows that organizations sampled here reflect the distribution of registered organizations in North America fairly well, except for construction. Those participating included three electronics firms, three automotive firms (one primary manufacturer and two suppliers), and two pharmaceutical companies (which federal codes classify as chemical). One utility and two public wastewater facilities also participated.

### **Why Organizations Seek Third-Party Registration**

Most observers agree that organizations seek third-party registration for one of two reasons. The first is internal purposes, such as increasing employee awareness, integrating environmental management within the firm, reducing materials use, or going beyond compliance. The second is external purposes, such as public recognition, vendor requirements, and regulatory benefits. The Academy's findings are consistent with these observations. Most organizations interviewed for this study valued third-party registration as a way to bring discipline to their management of environmental aspects and impacts.

Several organizations sought ISO 14001 registration because it was required by their parent firms or the companies they supply. Supply-chain management is a powerful market force driving some organizations to adopt and register their EMSs. Some hope that these requirements will provide added incentive for small and medium-sized enterprises to register their EMSs to ISO 14001 and use third parties to do so.

In the automotive sector, Ford and General Motors are now requiring their suppliers to adopt ISO 14001. Ford requires third-party registration, while General Motors allows self-certification. However, neither company provides criteria or guidance to suppliers on selecting registrars, other than instructing that the registrar must be accredited. When a supplier has requested assistance or advice, the companies have shared their experience or provided a list of resources. Both indicated that ANSI-RAB-accredited registrars would be acceptable, though they do not endorse specific registrars. It remains unclear whether the automakers' requirements will induce their suppliers and small and medium-sized vendors to register or will deter them if they perceive registration as an added cost not worth the benefit of maintaining their contracts.

By contrast with these motivations for private firms to obtain ISO 14001 registration, different factors drive public agencies to decide whether to adopt EMSs and seek registration. For instance, a city council member who controls funding for a municipal water treatment facility thought registration "would be a good investment." Several public facilities sought EMS registration to improve regulatory or public perception; one respondent did so with the hope that "EPA would consider ISO 14001 registration as a mitigating circumstance in any enforcement action." Most, however, wanted to send a signal to customers, communities, and governments that their "products and services are provided within the framework of a sound environmental management system."

Those seeking third-party registration for internal purposes thought that routine EMS audits would improve management discipline. Others reported that third parties could see things with a "fresh eye" that regular facility personnel might miss on a daily basis. Those seeking third-party registration for external reasons believed that the ISO 14001 registration certificate added credibility to their environmental management practices.

### **How Organizations Select Registrars**

Many potential registrants do not select a registrar until relatively late in developing their EMS, long after they have employed a consultant to assist them in the process. Several organizations interviewed used a lengthy and resource-intensive effort to find the appropriate registrar. For example, three firms met with four or five different registrars prior to making their decision. The vetting entailed slide presentations and lengthy interviews. Other firms merely used the same registrars that certified them to ISO 9000. Still others checked with comparable registered organizations to find out which registrar they used.

None of the participating firms reported that they selected a registrar based on expectations about the audit process or goals. All stated that auditor experience was the most important criterion in terms of industry-specific and environmental knowledge and training. Only one firm said their second most important criterion was a background in quality management systems such as ISO 9000. According to that respondent, QMS auditors are more valuable than those with environmental backgrounds because the latter tend to focus on compliance, with less emphasis on whether an EMS will move the firm beyond compliance.

### **Table 6-1. What Participating Firms Most Seek in an EMS Registrar**

*(in decreasing order of importance)*

- |  |
|--|
| <ul style="list-style-type: none"><li>• Registrar's and auditor's demonstrated experience in the business line</li><li>• Registrar's reputation</li><li>• Auditor's environmental/quality experience</li><li>• ANSI-RAB accreditation</li><li>• Low cost</li></ul> |
|--|

As Chapter Three discussed, some registrars complained that client organizations compel them to compete on the basis of cost and value added. However, only one client organization interviewed -- the smallest organization in the sample -- responded that cost was an important consideration in selecting its registrars. It is possible that smaller firms would have identified cost as an important factor if more such organizations had volunteered to participate in this study. In contrast, it is probable that large firms are better able than small ones to treat the cost of third-party registrations as an investment with expected financial returns.

Several firms believed that a registrar's reputation is important, but few were able to explain in objective terms what makes one registrar better than another. Several considered ANSI-RAB

accreditation to be an important criterion. One multinational firm with worldwide facilities preferred registrars accredited not only by RAB, but also by leading accreditation bodies outside the United States.

## **Satisfaction with the Third Party Process**

### EMS Auditor Independence

Most organizations interviewed had no complaints with their registrars. Indeed, most reported that registrars added value to their EMS by asking probing questions as part of the audit. Questions about company practices can cause firms to rethink what they are doing with the aim of making improvements. In some cases, auditors discussed industry best practices and possible areas for improvement. Only one organization reported that its auditor sometimes would slip and offer advice, but that he would quickly catch himself. The firm believed that the auditor offered the occasional suggestions because "he cared about the system and wanted to see it improved," not because he sought the company as a consulting client. Whatever the motivation, this example illustrates how an EMS auditor can slip -- accidentally or intentionally -- into the role of consultant.

### Audit Planning and Expectations

One division manager, who spent weeks preparing for an EMS audit, expressed disappointment that it did not begin with his division but with another one. Another reported that an auditor once appeared late, and a few said they questioned their auditor's interpretations of ISO 14001. Yet, all participating companies stated that registrars sought to resolve interpretation issues by supplying additional information and evidence on how the auditors reached their conclusion. In every case but one, companies reported that their registrars resolved these issues to their satisfaction.

Only one organization was so dissatisfied that its registrar was dismissed. That firm believed the auditor did not have adequate auditing experience in its particular line of business. In another case, a company retained its registrar but requested that it replace the individual auditor. According to the company, the auditor asked an employee to demonstrate knowledge of the firm's ISO 14001 objectives. The employee could not answer correctly and lost his temper when the auditor persisted. It is difficult to conclude whether the auditor was being too tough and tactless, or was performing the job correctly. Nonetheless, the potential for such conflict is inherent in the audit-trail process, which requires registrars to manage and accommodate carefully any personality conflicts while not allowing clients to intimidate or remove conscientious auditors.

## **Costs and Benefits**

In addition to satisfaction with the third-party process, the Academy's researchers asked organizations about the costs and benefits of using third parties. The five firms reporting costs said they paid from \$7,000 to \$25,000 per year. Firms did not report how much they paid registrars for other services, such as initial certification. Predictably, the larger companies reported that auditors were a relatively small proportion of their overall investment in setting up

and maintaining an EMS, itself an investment. Yet, if more small firms had participated, it is likely they would have responded that EMSs and registration are more added costs than investment.

Organizations most satisfied with the benefits of registration were those that adopted ISO 14001 as a means to improve and modify internal operations, rather than accrue external benefits such as regulatory relief or and improved public recognition. However, one multinational company reported that third-party certification helped it to win substantial contracts with European and Japanese firms that look favorably upon ISO certification. Firms adopting ISO 14001 for external purposes reported that benefits like improved public and regulatory recognition have been slow to materialize, due to lingering mistrust and misunderstanding of the standard among some regulators and interest groups. Others reported benefits such as reduced compliance costs, reduced materials use, and greater productivity.

Most companies reported that the use of third parties should not be viewed as a cost, but as an investment that generates returns over time. Only one organization reported that the paperwork and employee training requirements of the standards, when coupled with auditing costs, were too burdensome. This firm did not voluntarily adopt ISO 14001, but was required to do so by an automotive company to which it supplied electronics parts. The other organization required to adopt ISO 14001 stated that it initially held the same view, but the evaluation of its EMS led it to believe that the benefits far outweighed the costs. Most organizations registering an EMS to the standard understand that doing so entails making changes at multiple levels within their management and operations. As one respondent stated, "If you are approaching the decision to implement and register an EMS as a cost rather than an investment, you are not expecting to make changes and therefore make improvements."

## **Summary**

Some registrars have voiced concern that client firms increasingly require them to compete on the basis of cost. Yet other registrars and the client firms interviewed here did not cite cost as an important criterion in registrar selection. Rather, they listed experience in the firm's line of business as the most important criterion. Other key criteria include registrar reputation and accreditation to ANSI-RAB.

Most organizations participating in this study had few complaints about their registrars. Those that did usually disliked the order in which an auditor examined processes at their site. Such complaints may stem from misplaced expectations about an EMS audit or simply from division managers' personal disappointments when they had prepared for the audit but ultimately were not sampled. Organizations using third-party audits to improve their internal business operations were far more satisfied than those who did so to gain public recognition and relief from environmental agencies.

Many potential registrants did not select registrars until relatively late in developing their EMSs, long after they had employed a consultant to assist them in the process. This delay may lead to problems if the consultant is not highly qualified and experienced in EMS development and

registration expectations. It is important to note that there is no ISO 14001 training or certification program for EMS consultants, unless they choose on their own to enroll in EMS auditor training programs.

All but one organization reported that the benefits of using a third-party audit greatly exceeded the costs. They also stated that the third-party registration and auditing costs represented only a fraction of the costs for setting up an EMS and training staff. These results might have varied if more small and medium-sized enterprises had participated in this study. However, very few of them are currently using third parties to certify to the standard, which may explain why they did not participate. Accreditation bodies, registrars, trade associations, and public agencies should continue to pursue demonstration projects to illustrate how third-party certification can lead to positive returns over time, even for small and medium-sized businesses.

## **PANEL RECOMMENDATIONS**

### **❖ More Detailed Evidence of Third Party Benefits Is Needed**

- Recent EMS requirements by U.S. automakers for their suppliers may stimulate increased use of registration to ISO 14001. So far, however, the growth of third-party registration has been modest. Many U.S. firms are taking a wait-and-see approach to ISO 14001 registration.
- ANSI-RAB and/or registrar trade associations should develop more detailed evidence and examples of the benefits and costs of ISO 14001 certification. They should communicate this information more broadly, both to organizations considering ISO 14001 registration and to those that have not yet considered registration.
- U.S. automakers' requirements that suppliers register their EMSs to ISO 14001 may encourage more organizations, particularly small and medium-sized enterprises, to obtain ISO 14001 certification. However, companies that issue such requirements should consider providing more targeted outreach and assistance than currently offered, particularly to small and medium-sized suppliers.

### **❖ Small and Medium-Sized Enterprises, As Well As Public Agencies, Need More Information**

- There remain perceptions, particularly among small and medium-sized enterprises, that the costs of using EMS registrars outweigh the benefits. Further research is needed, and information should be disseminated, about the costs and benefits of third-party registration for small enterprises and publicly owned facilities.
- Private organizations, such as registrar and industry trade associations, as well as government agencies like the U.S. Environmental Protection Agency (EPA) and its

state counterparts, should consider methods to reduce registration costs for small and medium-sized firms. One method could be initiatives to bundle or pool similar small and medium-sized enterprises by facility type, sector, or geographic region.

- The U.S. TAG should more directly involve small and medium-sized enterprises in its deliberations.

#### ❖ **Criteria for Selecting Registrars Should be Strengthened**

- Both public and private organizations begin their search for registrars relatively late in the EMS development process. ANSI-RAB and the registrars' trade association should encourage earlier and more careful selection among potential registrars.
- Consultants often have a far earlier and more important influence on EMS development than registrars or auditors. ANSI-RAB should develop at least a voluntary program for training and certifying EMS consultants.
- ANSI-RAB and the registrars' trade association should consider developing an interview guide for potential registrants to use in selecting registrars and to help them understand more clearly the steps needed prior to third-party registration. This guide should be developed with EMS Council oversight to ensure that it reflects broad input, as well as the experience and peer review of registrars. Such a guide should recognize the diversity among prospective registrants in terms of their size, complexity, and potential environmental impacts.

## CHAPTER SEVEN

### HOW THE EMS REGISTRATION SYSTEM CAN EVOLVE TO MEET MORE THAN BUSINESS EXPECTATIONS

The third-party registration and auditing system under ISO 14001 was initially developed as an international voluntary standard for business use, modeled partly on prior standards and partly on older and more widely established practices, including financial statement auditing and ship certification.

It was recognized from the outset that some public policy issues and stakeholder concerns specific to environmental management did not figure as largely in other prior systems for business-to-business standards. As such, ISO 14001 requires that registered firms demonstrate their commitment to regulatory compliance and pollution prevention, and to continual improvement of the EMS itself.

At the same time, these considerations produce conflicting expectations about whether registration should certify that a firm is implementing its own self-selected goals and objectives, or that it is conforming to some generally accepted standard of EMS effectiveness that is comparable across registered organizations. An ISO 14001 audit examines an EMS, not compliance or environmental performance per se. Ultimately, however, it is not possible to claim credibly that an EMS is effective or continually improving without producing objective evidence that environmental performance is likewise.

The previous chapters have described the ISO 14001 accreditation, registration, and auditing processes. They also have documented through interviews and site visits the perspectives of participants in these processes: registrars, auditors, client organizations, ANSI-RAB, and the EMS Council. This account has two purposes: to promote broader understanding of a relatively new and still developing process and to identify issues requiring attention to ensure the credibility and effectiveness of the EMS registration system as it evolves.

Even at its relatively early stage of development, the EMS registration system under ISO 14001 is being used for public policy purposes beyond the voluntary business context for which it was envisioned. Its role in enforcement agreements, government recognition programs, “performance track” and “green tier” regulatory initiatives, as well as adoption mandated by government or business has triggered debate about additional considerations beyond the standard’s existing requirements. These considerations include more public reporting and more explicit regulatory compliance and environmental performance measures. Given this situation, it is important for public policy purposes and for interested businesses to have a registration and auditing system that is carefully examined on the merits of emerging practice, not merely in the context of “ISO-plus” conditions and EMS adoption embedded within the requirements of government programs.

Overall, ISO 14001 accreditation, registration, and auditing systems are developing well at this stage. The concept appears basically sound, and registration has grown to more than 1,100 organizations with an accelerating trend. The systems appear to be keeping up with this growth without becoming overwhelmed or experiencing a decline in quality. Further, most of the registered organizations contacted for this study were satisfied with the results. Most reported that third-party registration and auditing have enhanced their management practices and business

effectiveness. Registration and auditing are not merely an expensive paper certificate to satisfy external demands. These early results offer promise for continued development and even improvement. However, there remain other unresolved issues, such as variations in interpretation and professional norms that deserve attention and improvement.

Many U.S. organizations have taken a wait-and-see approach to third-party registration. As a result, EMS auditors, registrars, and ANSI-RAB accreditation and oversight staff have been able to keep pace with the moderate demand. Yet, there is reason to believe this situation will change. More firms, such as Ford and General Motors, are requiring ISO 14001 registration for their suppliers. Also, as the benefits of registration become widely recognized, more firms are likely to seek registration irrespective of customer mandates.

As more organizations seek registration, they will likely pursue benefits beyond those that are strictly internal to the firm. Industry expectations that environmental agencies will develop public policies based on EMSs may also place greater demands on the registration system. At a minimum, organizations will increasingly look to ISO 14001 as a tool for demonstrating that an audited EMS is in place to address environmental aspects and impacts.

### **Areas for Further Research**

This report provides a modest assessment of ISO 14001 registration practices at a specific and relatively early point in time. It is not the final word. Ideally, interested stakeholders will test, verify, and even refute its findings, especially as the registration system develops and matures. Indeed, some significant issues that arose at the study's outset, such as reliance on affirmative statements, were addressed and perhaps have become less important during the study period. Others will supplant many of the observations and concerns raised here as the system progresses. That is why ongoing study and system evaluation are so important.

Time and resource constraints have limited the depth of this study. Within the registration system, however, the only issue not examined in-depth is auditor training. Future research should analyze the work of these course providers and their curricula and should also ascertain whether their instruction promotes uniformity among EMS auditors when they conduct audits. Preliminary evidence indicates that variations in auditor training exist. For example, some course providers have laboratories offering hands-on training to prospective auditors. Others reportedly waive such requirements. In addition, future research might consider the extent to which this training increases the competence of EMS consultants and how it might do so more effectively. As noted above, organizations often use EMS consultants long before they engage an EMS registrar. But, at present, there is no assurance that these consultants have equivalent competence and knowledge of the ISO registration process and its requirements.

Future research should also include a wider survey of registered organizations to learn how they select registrars and whether they are satisfied with the process. Special efforts should be made to solicit the views of small and medium-sized enterprises and their perceptions of cost constraints attributed to third party-registration.

Another important area for research is how registrars and their auditors conduct pre-audit planning, scoping, and costing procedures and whether they are sufficient to provide an adequate basis for registration decisions. Research questions should include:

- What information does the registrar require from prospective client organizations as the basis for preparing a proposed contract/bid and audit plan for registration and auditing services?
- What pre-audit preparation time and staff activities does the registrar include in the audit plan for audit planning itself and for determining the actual number of on-site audit days? Activities may include document review, audit design, and audit team development.
- What information and criteria does the registrar use to evaluate the appropriateness of the proposed audit scope, plus related resources and efforts required? Differences in information include single vs. multiple facilities being audited, fence-line-to-fence-line vs. specified units and functions, simple vs. complex functions included, scale and significance of potential environmental aspects and impacts, number of employees, sole control of facility vs. division of control among on-site contractors, and site-specific vs. life-cycle EMS.
- What information and criteria does the registrar use to design and specify audit team competencies required for a specific audit? Criteria include a single lead auditor vs. a two-person team vs. a larger team that has separate specialties.
- What information and criteria does the registrar use to determine auditing needs beyond the facility site itself? Criteria include verifying off-site waste disposition cross-checking material statements involving off-site contractors and evaluating statements on the organization's consideration of external stakeholders.

Finally, future research should extend beyond the United States to include accreditation bodies and registrars that work in other nations. Registrars participating in this study pointed out that the onus is not solely on ANSI-RAB, but on all accreditation bodies to ensure that ISO 14001, which was designed to promote international EMS uniformity, is applied uniformly. Registrars believed that the International Accreditation Forum must take a more aggressive stance to guarantee that the accreditation process is more uniform. In their view, there must be credible international expectations backed by effective norms and sanctions, where necessary, or else the system will not work.

### **Areas for Future Improvement**

This study identified several areas where the current system should be strengthened to address present and future challenges. The following discussion summarizes incremental improvements that should be made to the accreditation, registration, and auditing systems by both current participants and other stakeholders.

#### Greater Transparency

ANSI-RAB has recognized the public stake in environmental protection by creating the EMS Council, which includes government and public interest group representatives. Indeed, the Council makes the most important decisions affecting U.S. registration practices by setting the policies and procedures for accrediting registrars and course providers as well as making

decisions on whether to accredit, suspend, or withdraw accreditation. Yet the Academy's research has identified several areas where ANSI-RAB, in coordination with accredited registrars and a well-constituted EMS Council, needs to do more to ensure a sufficiently robust registration system; to identify and sanction recalcitrant registrars, EMS auditors, and organizations; and to assure uniform application and adherence to ISO 14001 as the market for EMS registration continues to grow.

Greater transparency and public documentation of ANSI-RAB's complaint resolution and sanctioning processes would significantly enhance the credibility of, and public confidence in, the EMS registration system. This openness does not necessarily require that ANSI-RAB make public the names of individual registrars about which complaints are received or against which sanctions short of termination of accreditation are imposed. Rather, timely and accurate information on the number and nature of complaints should be provided. If it has not already done so, ANSI-RAB should itself seek certification to the ISO 9000 quality management standard, thereby affirming that it has an auditable, documented system to receive and act upon complaints.

In addition, the EMS registration system would benefit from greater transparency. One or two private firms collect and make public the names of accredited registrars and their clients, but ANSI-RAB has not endorsed these sources. Rather, it has provided links to them on its web site. Every accredited registrar is required to maintain a publicly available directory of registered firms. However, a public listing should be developed and maintained, either by ANSI-RAB or some other accountable, credible source. The information should include facilities registered as ISO 14001 conformant, dates of registration, scope of facilities, and registrars' names. ANSI-RAB or the EMS Council should decide who will maintain the listing, who will pay for it, and how continuous participation and updating can be assured.

### Reporting Requirements

There is an unresolved conflict of expectations about public reporting of environmental performance indicators and outcomes. The ISO 14001 auditing system is often characterized as analogous to the financial auditing system, yet it is different because ISO 14001 does not require public disclosure of environmental performance results, unlike publishing a company's financial statement. Under ISO 14001, the EMS audit is a confidential report to an organization's management. Yet, the goal of an audit is to provide the assurance of public certification and conformity with a publicly available standard.

It is not accidental that ISO 14001 is limited on this point. It reflects a basic disagreement among its drafters about whether the auditing and registration process should be designed to foster internal management improvements or to impart information to the public. The resulting standard became a hybrid that is useful to managers but less informative to the public, and less clear about what third-party auditing and registration represents. This confusion contrasts sharply with the openness of financial auditing and reporting.<sup>27</sup>

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<sup>27</sup> CASCO Guide 66, paragraph 2.1.9, continues to prohibit disclosure by accreditation bodies of detailed information learned during registration audits.

Extensive public reporting on environmental and social performance has developed concurrently with the ISO 14001 registration system. Some models for these types of reports, such as the Global Reporting Initiative (GRI), are now well developed. GRI attempts to find agreement among businesses, environmental groups, accounting firms, and others on guidelines for standardized environmental management and sustainability reporting. Toward this end, it has adopted a hierarchy for organizing and presenting information in sustainability reports.

Arguments for such initiatives focus on public and investor interest, as well as the benefits to businesses of having a single widely accepted and credible reporting format. The TC 207 anticipates that it will consider additional guidance on external communications at an upcoming meeting, but it is not expected to adopt significant additions to the ISO 14001 standard.

Given these developments, the U.S. TAG should consider how public reporting of environmental and social performance can be addressed more explicitly as part of the ISO 14001 documentation and certification process. This is an important public issue that contributes to the wide variations in expectations between the public and industry about EMS registration. Discussion of these issues should include participants from public interest groups and smaller businesses in order to improve the usefulness of the results.

#### Maintaining a Strong and Uniform Registration System

To ensure effectiveness and credibility, EMS accreditation and registration systems must develop strong norms of uniformity for professional competence and standards and for the interpretations and judgments of registrars and auditors in practice. A certificate of registration must have a reliable, common meaning across locations, registrars, facilities, and registered organizations. It must not merely represent each registrar's or business' individual ad hoc preferences and marketing claims.

Private companies, public facilities, and registrars interviewed for this study expressed strong interest in maintaining the integrity and prestige of the ISO 14001 certificate. Yet conflicts arise inevitably because registrars compete for business. So long as they promote uniformity and emphasize integrity, registration practices will remain strong. Offering "easy" certificates, however, threatens the credibility and value of all EMS certificates. Some registrars said clients increasingly haggle with them about reducing audit days as a way to cut costs but also demand that they add value to the registration audit. These opposing forces place additional, awkward pressure on registrars to offer both easy certificates and value-added certificates, thereby reducing the likelihood that a certificate issued by one registrar is as good as any other.

#### Paramount Role of the Accreditation Bodies

ANSI-RAB's accreditation and auditing procedures are the most important components for ensuring the credibility of the registration system. As the national accreditation body it must be a strong, vigorous, and positive force for upward harmonization of auditing and registration norms. It must also serve as the principal guardian against any efforts to devalue the credibility of auditing and certification and should act fairly but vigorously to correct, sanction, or suspend poor registrars.

ANSI-RAB seeks to ensure competence and consistency among registrars by applying stringent standards for accreditation and by using a small pool of highly trained accreditation auditors to monitor 27 registrars. These practices are probably sufficient for now; but ANSI-RAB, its registrars, and their trade associations will need to devise ways to uphold the integrity of the registration system as demands increase. ANSI-RAB should promote strong common understanding and high professional standards for all registrars and auditors related to appropriate interpretations of the standard and high levels of professional integrity in conducting ISO 14001 registrations.

ISO 14001 audits are environmental management *systems* audits, not a regulatory *compliance* audits. The accreditation, registration, and auditing communities all agree with and accept this distinction; but the general public frequently does not understand it. ISO 14001 requires that an EMS must include certain elements, including commitments to compliance with all legal and regulatory requirements, to prevention of pollution, and to continual improvement of the EMS. The auditor must audit against these requirements, not merely against the organization's own goals, objectives, and targets. In short, an EMS auditor must make a reasoned judgment that the firm is doing what it claims, and that it is satisfying the requirements of ISO 14001. Some auditors currently seem to require only that an organization's management procedures match its stated goals.

To perform a credible EMS audit, an auditor must have access to adequate objective evidence concerning any material statement or claim contained in the EMS. This evidence includes information on the effectiveness of compliance-management procedure, and on management procedures used to ensure appropriate corrective actions and non-recurrences related to environmental performance. Such evidence should be sampled with particular attention to potential environmental significance. A competent audit also should entail the auditor asking about apparently significant environmental aspects or impacts, or overlooked opportunities for more rapid improvement, that are not included in the EMS. This principle logically follows from ISO audit guidance specifying that auditors will evaluate the organization's significance-determination procedures.

The Panel endorses ANSI-RAB's recent guidance requiring that registrars obtain objective evidence of the existence and implementation of procedures for evaluating legal compliance, compliance review by management, and implementation of needed corrective and preventive actions.

The Panel encourages ANSI-RAB, U.S. TAG, ISO TC 207, and CASCO to consider developing additional guidance on several matters that now appear ambiguous to many professional auditors and registrars. These include:

- More explicit elaboration on how to interpret continual improvement and "prevention of pollution." In particular, how should auditors judge what pace of continual improvement in the EMS is sufficient to warrant registration?
- Consideration of additional guidance on any differences in application of registration practices to small and medium-sized enterprises and to public entities such as local government facilities, public hospitals, and public educational institutions. Some

may argue that this guidance is not needed or appropriate; others believe it would be helpful, if only to reaffirm that little difference exists.

- More guidance on minimum standards for initial certification auditing, based not only on audit days at the facility, but also on emerging best practices for pre-audit planning, budgeting, scoping, team composition, and first/second stage audit visits
- More guidance on surveillance auditing, including best practices for promoting continual improvement of EMSs over successive surveillance audits and re-certification audits
- As registration and auditing practices develop, ANSI-RAB and professional associations for registrars and auditors should encourage peer review, benchmarking of best practices, and widespread dissemination of these practices.

### Peer Review and Benchmarking

The SEC's system for financial accounting relies heavily on peer review, in which one accounting firm audits another. As the ISO 14001 registration and auditing systems mature, the Panel believes that ANSI-RAB should seriously consider establishing a similar system for EMS registrars and auditors. In the meantime, registrar trade associations or a neutral party could develop objectively determined benchmarks against which registrars could choose to rank themselves. The aluminum and semi-conductor industries have these benchmarking systems to monitor voluntarily their greenhouse gas emissions and other environmental impacts. Firms report voluntarily to a trade association, appointed law firm, or private data firm that scrubs their identity and aggregates the data. Then participating firms can enter the database and learn how their ranks compared to their competitors.

One of the best ways to promote greater uniformity is to encourage organizations, both business and public sector, to select their registrars based not on the lowest cost, but on professional competence, relevant experience, and understanding of the uses of the audit process. In this process, the registration process can identify differences between current management practices and the goals established by the organization and the ISO 14001 standard.

### More Information on Registrar Selection

ANSI-RAB's staff give presentations to businesses on how to select a registrar, and they have posted criteria for selecting registrars on the ANSI-RAB web site. One of the best ways to promote the integrity of ISO 14001 is to provide businesses, particularly small and medium-sized ones, with even more guidance on selecting a qualified registrar. The Academy's research staff found that most organizations select registrars rather late in the process, after they have used a consultant -- who may or may not be well trained in registration requirements -- to help design their EMSs. The businesses and registrars interviewed for this study reported that experience in their specific line of business was the single most important criterion for selecting a qualified registrar.

Experience is crucial in conducting an effective EMS audit. Above all, however, organizations must know more about how to select a registrar that will catalyze continual improvement in their EMS and, at the same time, uphold high standards of integrity. This integrity includes refraining from telling a firm exactly how to improve its EMS. Guidance should help firms to ask probing questions about how potential registrars approach their task, how well they understand the processes and products of the business to be audited, how they initially scope audits, how they assess the adequacy of a firm's objectives and targets, and how they plan priorities and resources for surveillance audits. Those interviewed for this study believed that surveillance audits are the key determinant in promoting continual improvement of EMSs. Potential clients also need to ask registrars probing questions about the training and experience of a lead auditor and the audit team. For instance, how does the registrar assemble audit teams? Are the auditors full-time employees or on contract? Will the lead auditor be deployed throughout the three-year registration cycle? If not, what are the costs and benefits of switching auditors during the cycle?

#### Organizations Need More Guidance on the Benefits and Costs of Third-Party Registration

ANSI-RAB and most EMS registrars provide information electronically and in hard copy about benefits of using third-party registrars to certify EMSs. Participants in the registration system should adopt additional ways to communicate realistic and clear information on registration costs and benefits to organizations that might benefit from being registered to ISO 14001. These organizations include private companies that have adopted an ISO-like EMS without certification, as well as public facilities.

#### ISO Registration and Public Policy Initiatives

The requirements of ISO 14001 registration should be carefully distinguished from other requirements and expectations imposed as conditions of public policy initiatives. Initiatives that provide administrative or regulatory benefits in exchange for having an EMS in place must be cautious in concluding that policy goals will be achieved through voluntary EMS registration alone. Policy makers should also be wary of attempting to impose these goals on the voluntary EMS registration process itself.

#### **More Public Outreach is Needed about the Benefits and Costs of Third-Party Registration**

ANSI-RAB's leadership values the importance of serving its accredited registrars and their client organizations that continue to view ISO 14001 registration as strictly by business, for business. Yet it also recognizes that this view, even among industry, is changing. Those interested in third-party registration not only include businesses, but also such public organizations as municipal facilities and public universities.

Government, including state and federal regulatory agencies, is increasingly looking to the EMS registration system to meet broader and different expectations. This report can inform the public and other parties about how the registration system works. EMS registrars and auditors were gracious to invite the project staff to attend EMS audits and gain a better understanding through lengthy conversations and office tours. Those outside the system should accept similar invitations to see how the system works and the promise it holds. However, those inside the system -- accreditation bodies, registrars, and EMS auditors -- must play a greater role in managing the expectations of the public.

The Panel is indebted to all participants in this study, and especially to the staff at ANSI-RAB, for their willingness, time, and patience while participating in this study. In addition, EPA

officials, members of public interest organizations, public facilities, private firms, and other organizations have devoted enormous time and energy to contributing their views during our research. The Academy is grateful to all of these participants and to EPA's Office of Water who made this report possible.

It is important to note that ANSI-RAB has begun to offer more education to interested private businesses, citizen groups, and public agencies about how the registration system works and where it could be strengthened. For example, ANSI-RAB is offering public forums for state regulators who are interested in learning more about EMSs. These efforts are laudable and should continue. Registrars and auditors could also help to shape more accurate and realistic public expectations by promoting greater uniformity, adopting effective peer review, and communicating high professional auditing standards more clearly during public policy discussions and debates surrounding the EMS registration system. Trade associations have traditionally performed this function in other industries, and registrars should consider giving their own association sufficient resources to undertake this vital function.

Actors and organizations outside the EMS registration system would benefit from clearly understanding and directly experiencing how the system and the ISO 14001 standard work in theory and in practice. Expectations by non-participants are, in many ways, both too high and too low. They are too high because they seem to expect that EMS registration will help to enforce environmental compliance or verify performance. Yet, they are also too low because they underestimate the continual improvements in environmental performance that can result from well-functioning and carefully audited EMSs.

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## **APPENDIX A STUDY METHODOLOGY**

Assessing the ISO 14001 registration practices system poses several challenges. For one, the system is young and largely private, making it difficult to obtain quantitative data. Also, the system calls for a different standard of evaluation than those used to evaluate public policies. Public policies that give organizations public benefits in the form of recognition, reduced inspections, or relief from regulatory requirements must be held to a higher standard of evaluation than a system in which organizations unilaterally and voluntarily agree to use third parties to audit their EMSs.

Some observers unfamiliar with or untrained in EMS auditing evaluate the EMS registration practice relative to more stringent public policy goals. Others base their evaluation on other forms of auditing, such as compliance, or on weaknesses inherent in auditing, including the temptation to offer consulting services. Still others expect the practice to impose a set of uniform elements or practices. However, these are imprecise metrics by which to evaluate the practice.

At this stage of its development, the method used to evaluate the registration practices system should be to assess whether registrars, auditors, organizations, and accreditation bodies are doing what they claim and to crosscheck their responses. This method is designed to ensure consistency in reporting between registrars and auditors, and between the organizations that hire registrars and their EMS auditors. Such responses should be provided to the U.S. entity responsible for accrediting registrars. Similar to the way that an EMS auditor develops objective audit evidence, responses that illustrate inconsistency should be taken as a signal to develop more detailed information.

The observations and recommendations contained in this study are based on interviews with the major participants in the ISO 14001 registration practices system. These participants include registrars, EMS auditors, organizations, and the U.S. entity that accredits registrars for the ISO 14001 standard. To supplement information gained through interviews, project staff accompanied EMS audit teams on three audits of U.S. industrial facilities. In-person and telephone interviews were conducted on a non-attribution basis between September 2000 and January 2001. Prior to each interview, the participant received a questionnaire on which the interview was based. The questionnaire is included in Appendix B.

The interview sample includes 14 registrars, 6 EMS auditors, and 11 organizations that have registered, or are considering registering, their EMSs to ISO 14001. A list of these registrars and applicants is contained in Appendix D. The 14 registrars interviewed represent slightly more than half of all registrars accredited by ANSI-RAB. Of the 14 registrars, all but one have ANSI-RAB 14001 accreditation or are in the process of applying for it. The registrar that has not sought ANSI-RAB 14001 accreditation has received RAB accreditation for ISO 9000.

Four of the 27 registrars accredited to ANSI-RAB base their principal EMS operations outside the United States. Because the focus of this study concerns U.S. registration practices, only one of those four was selected in the initial set of registrars to participate in this study.

Information gained from trade associations and individuals was used to identify those most appropriate within the registration body or firm to interview. Where possible, registrar interviews were conducted with vice presidents or heads of conformity assessment practices. In some cases, the registrar's ISO 14001 program manager was interviewed. EMS auditors were identified through interviews with registrars, environmental regulators, and organizations that have registered their EMSs with ISO 14001. Organizations participating in this study were identified through interviews with registrars, environmental regulators, and trade associations.

Identifying organizations that were comfortable letting outside observers view their EMS audits was the most challenging part of the study. Although many registrars and auditors volunteered to let project staff accompany them, they soon found that many clients were afraid to let outside observers in, especially upon learning that EPA sponsored the study. It was not that firms sought to hide particular features of their EMSs. Rather, there was a perception that project staff were “regulators in disguise.” To these organizations, that is not what ISO 14001 should be about.

Given that the interviews were voluntary, the sample is not random and may reflect the better registrars, firms, and auditors. However, with more than half of all registrars responding, the sample presents a solid snapshot of the industry, as illustrated by Figure 1-2. Likewise, the composition of the sample of organizations that agreed to participate in the study, shown in Figure 1-2, reflects fairly well the composition of all organizations in the United States that have thus far registered their EMSs with ISO 14001.

## **APPENDIX B INTERVIEW QUESTIONS**

### **Interview Questions for ISO 14001 Registrars**

1. Why does a firm seek to become a registrar? What is the value proposition?
2. How do registrars recruit auditors? What skills and training do firms want their auditors to have?
3. How do the registrars -- and the profession at large -- monitor the work of the auditors?
4. From the point of view of a registrar, what are companies looking for when they hire a registrar to certify their EMS?
  - How important is the auditing firm and its reputation?
  - How important is the individual auditor?
  - How important is demonstrated experience in the firm's line of business?
  - Cost?
  - Other?
5. To what extent do firms check the qualifications and performance of registrars or particular auditors before hiring them?
6. How does a registrar typically check or monitor ongoing implementation and EMS conformity to the standard?
7. What specific types of information or conditions do auditors look for in, and what are the procedural differences between, the initial on-site registration audit and a surveillance audit?
8. How do the auditors assure themselves that they get honest, complete information from the firm (i.e., how do auditors and firms deal with conflicts over access, information, or findings)?
9. What is the most important aspect of the certification guidance for the registrar?
10. To what extent do auditors make judgments and on what types of issues (e.g., on distinguishing between major and minor non-conformances, or on determining a firm's commitment to compliance, to pollution prevention, or to continual improvement)?
11. How do auditors make these judgments and what types of information do they use?
12. What information, if any, do auditors provide the firms that might help them improve their EMSs or identify problems with compliance; in what ways does the certification process

differ from a compliance inspection?

13. What steps do registrars and auditors take to maintain their reputations?
14. What mechanisms are in place to ensure that registrars and their auditors are qualified and maintain high standards of integrity?
15. How are the decisions and work-products of auditors checked or verified? By whom? Who has access to that information?
16. What, if any, complaints do registrar firms and auditors encounter?
17. What is the significance of the use of "affirmative statements?" Do you believe that the use of affirmative statements is controversial? If so, why?
18. How do registration practices adjust to the particular needs and budget constraints of small-to-medium-sized businesses and public operations seeking registration?
19. What steps can registrars take to improve the system's overall effectiveness?

### **Interview Questions for ISO 14001 Auditors**

1. Why did you seek to become a 14001 auditor? What is the value proposition?
2. What skills and training did you acquire?
3. If you are a lead auditor, why did you pursue that training?
4. How did the registrar recruit you? What skills and training did your employer seek?
5. How does the registrar -- and the profession at large -- monitor your work?
6. From the point of the view of a auditor, what are companies looking for when they hire a registrar to certify their EMS?
  - How important is the auditing firm and its reputation?
  - How important is the individual auditor?
  - How important is demonstrated experience in the firm's line of business?
  - To what extent do firms check your qualifications and performance of registrars before hiring you/your registrar?
7. What are the critical factors for the auditor in the initial or original ISO registration of a company's EMS?

8. How does an auditor typically check or monitor ongoing implementation and EMS conformity to the standard?
9. What specific types of information or conditions do auditors look for in, and what are the procedural differences between, the initial on-site registration audit and a surveillance audit?
10. How do you assure yourself that you get honest, complete information from the firm (i.e., how do you and the client organization deal with conflicts over access, information, or findings)?
11. To what extent do auditors make judgments and on what types of issues (e.g., on distinguishing between major and minor non-conformances, or on determining a firm's commitment to compliance, to pollution prevention, or to continual improvement)?
12. How do you make these judgments and what types of information do you use?
13. What information, if any, do you provide the firms that might help them improve their EMSs or identify problems with compliance; in what ways does the certification process differ from a compliance inspection?
14. What steps do you take to maintain your reputation?
15. What mechanisms are in place to ensure that you and the registrar are qualified and maintain high standards of integrity?
16. How does the registrar monitor, check, and verify your decisions and work-products?
17. Who has access to your decisions and work products?
18. What, if any, complaints do registrar firms and auditors encounter?
19. What is the significance of the use of "affirmative statements?" Do you believe that the use of affirmative statements is controversial? If so, why?
20. What steps can auditors take to improve the system's overall effectiveness?

### **Interview Questions for ISO 14001 Registered/Certified Organizations**

1. Who within the organization or company initiated the interest for ISO 14001 EMS registration?

2. What would you say are three noteworthy motivating factors that the company/organization discussed as reasons to become ISO registered?
3. What level of approval was needed to go forward with ISO registration?
4. Did you choose to use a third-party "registrar" to register and certify to ISO, or did you self certify? If so, why (for either self or third-party)? (What is the difference between self-certifying and third party from your point of view?)
5. If you used a third-party registrar: From the point of view of your business, what are you looking for when hiring a registrar to certify their EMS?
  - How important is the auditing firm and its reputation?
  - How important are individual auditors, their experience, or credentials?
  - How important is demonstrated experience in the firm's line of business?
  - To what extent did you check the qualifications and performance of registrars or particular auditors before hiring them?
6. What are the critical decision factors for the company or organization in the initial or original ISO registration of a company's EMS (e.g., conformance with the company policy, regulatory compliance, other business interests: vendors and suppliers, financial, or reputation)?
7. How do you typically check or monitor ongoing implementation and EMS conformity to the ISO standard?
8. What specific types of information or conditions do you or the auditors look for during the initial on-site registration audit as compared with a surveillance audit?
9. How do assure your company or supervisors, and the public that honest, complete information has been put forward by the firm (i.e., how do you deal with the public and auditing access of information or findings)?
10. What information, if any, do auditors provide the firms that might help them improve their EMSs or identify problems with compliance; in what ways does the certification process differ from a compliance inspection?
11. What, if any, complaints did you have about the registrar firms, auditors, or ISO registration and certification process?
12. What is the significance of the use of "affirmative statements" in determining the level of regulatory compliance? Do you believe that the use of affirmative statements is controversial? If so, why?
13. What steps should be taken to improve the system's overall effectiveness?





**APPENDIX C**  
**INTERVIEWS CONDUCTED**

**ACCREDITATION BODIES**

***American National Standards Institute***

John Donaldson, Vice President, Conformity Assessment

***Registrar Accreditation Board***

Joseph Dunbeck, Chief Executive Officer  
Scott K. Richter, Director, Registrar Programs  
Janet Jacobsen, Communications Manager

**AUDITORS**

***BSi, Inc.***

Bill Hollrich, Vice President of Operations, Lead Auditor

***BVQI North America Inc.***

Mary Rose Nguyen, Former Lead Auditor

***Iowa Waste Reduction Center***

Marci Carter, Auditor

***KEMA-Registered Quality, Inc.***

Robert Auerbach, ISO 14000 Program Manager

***NSF-ISR Inc.***

Chris Lupo, Auditor  
S. Petie Davis, CHMM, Senior Program Manager, Strategic Registrations

**ORGANIZATIONS**

***Bristol Myers Squibb***

Sonia Ortiz-Vilar, EHS/ISO Consultant

***Charter Steel***

Mark J. Haase, CHMM, Environmental Engineer  
Tari Emerson, P.E., Procurement Manager/Environmental Affairs Manager

***City of San Diego, California***

*Chris Toth, Deputy Director of Metro Waste Water Department,*  
Operations and Maintenance Division

***Ford Motor Company***

Bob Devlin, Manager, Environmental Management

***Johnson Controls, Inc.***

Debbie Hastings, Senior Environmental Engineer

***Lowell, Massachusetts Municipal Solid Waste Disposal Facility***

Mark Young

***Lucent Technologies***

Ted Polakowski, Environment and Safety Officer and Manager, Microelectronics

***Pfizer***

Mike Lemon, CHMM, Environmental Director

***Rockwell Automation***

Charyl Fines, P.E., Environmental Director

***Sony Electronics***

Mildred Lozano, ISO Director

***Wisconsin Electric***

Brian Borofka, Principal Strategist, Environmental Group

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Patricia Fitzgerald, ISO 14000 Program Manager

***AQSR International, Inc.***

Todd Heller, 14001 Program Manager

***American Quality Assessors***

Bart Walrath, Director of Registration

***BSi, Inc.***

Reg Blake, Vice President, Corporate Development

***Bureau Veritas Quality International***

David Church, Director, Environmental Services

***Det Norske Veritas***

Bill Sullivan, Marketing Manager

Roger Howe, General Manager and Vice President

Russ Thornton, Manager, Environmental Health and Safety Certification

***EAQA USA Registrars***

Thomas F. Haney, President

***KEMA Registered Quality***

H. Pierre Salle, President

***Lloyd Lamont Design, Inc.***

Mark Birch, Vice President

***NSF-ISR Inc.***

Kevan Lawlor, President

***Perry Johnson Registrars, Inc.***

Richard Powals, P.E., ISO 14001 Program Manager

***Quality Systems Registrars, Inc.***

Dwayne D. Breaux, RAB/IATCA Senior Auditor and Audit Program Director

***Underwriters Laboratories Inc.***

Steve Freeman, Senior Lead Auditor 14001 Program Manager, Quality Registration Services

***VCA North America***

Rob Brayfield, Head of Operations

Mike Sluder, Environmental Program Manager

**TRADE ASSOCIATIONS**

***International Association of Accredited Registrars***

Milton M. Bush, J.D.



## APPENDIX D

### ANSI-RAB ACCREDITED ISO 14001 REGISTRARS AND APPLICANTS

#### REGISTRARS

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Diane Pryde

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### *APPLICANTS*

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## APPENDIX E

### PANEL AND STAFF

**Richard (Pete) Andrews**, *Panel Chair* -- Professor of Environmental Policy, Department of Environmental Sciences and Engineering and Curriculum in Public Policy Analysis, University of North Carolina at Chapel Hill. Former Director, Institute for Environmental Studies and Director, Environmental Management and Policy Program, University of North Carolina at Chapel Hill; Positions with University of Michigan Ann Arbor, including Assistant and Associate Professor of Natural Resources Policy, School of Natural Resources; Assistant and Associate Professor of Urban and Regional Planning.

**Joel Charm** -- President, Charm HS&E International Inc. Former Director, Health, Safety and Environment, Allied Signal Inc.; Chairman, US SubTAG 1 and Convener, ISO TC 207 SC 1 for Environmental Management (ISO 14001/14004).

**Hank Habicht** -- Chief Executive Officer of Global Environment & Technology Foundation. Former Senior Vice President with Safety-Kleen Corporation; Deputy Administrator, U.S. Environmental Protection Agency; Assistant Attorney General, U.S. Department of Justice; Vice President and Counsel, William D. Ruckelshaus Associates, Current Member, the Resources for the Future Board; Princeton Environmental Institute and National Pollution Prevention Roundtable Advisory Councils; Dow Chemical Corporate Environmental Advisory Council.

**Thomas Knowlton** --Senior Associate at the Conservation Company. Former Executive Director, Council on Economic Priorities; Director of Marketing and Publications, Earthwatch; Consultant, Earth Force; Director of Marketing, CFO Magazine.

**Myrta (Chris) Sale** -- Chief Financial Officer, Federal Deposit Insurance Corporation. Former Director of Management Initiatives, U.S. Office of Management and Budget; Chief Operating Officer, Small Business Administration; Positions with Immigration and Naturalization Service, U.S. Department of Justice: Deputy Commissioner, Acting Commissioner, Executive Associate Commissioner for Management; Director, Finance Service and Chief of Staff to the Assistant Secretary for Finance, Department of Veterans Affairs; Vice President for Administration and Treasurer, National Public Radio.

**Victoria J. Tschinkel** -- Senior Consultant for Environmental Issues, Landers & Parsons. Former Secretary and Assistant Secretary, Florida Department of Environmental Regulation; Biologist, Tall Timbers Research Station.

### STAFF

**Suellen Terrill Keiner** – Director, the Center for the Economy and the Environment, National Academy of Public Administration. Former Senior Attorney and Director, Program on Environment, Governance and Management, the Environmental Law Institute; Director of Litigation, the Environmental Policy Institute; Assistant Solicitor and Deputy Assistant Secretary for Energy and Minerals, U.S. Department of Interior; Natural Resources Consultant, Council of State Planning Agencies; Attorney representing environmental and civil rights groups in citizen suits.

**Jan Mazurek** -- Project Director. General Partner of the Novation Policy Group. Expert on the use in the United States of voluntary environmental agreements. Author, Making Microchips (MIT Press 1999) and Co-author with J. Clarence Davies, Pollution Control: Does the U.S. System Work ? (RFF 1998). Policy analyst in Washington D.C. since 1994 at organizations including the U.S. Environmental Protection Agency, Resources for the Future, and the National Academy of Public Administration.

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