



## ***Environmental Management Systems and ISO 14001***

### ***What is an Environmental Management System?***

EMS is a systematic approach to the management of all of the environmental aspects of operating a business, organization or any entity that has impact on the environment.

***EMS is a continuous improvement process that reduces environmental impact.***

### ***Some Background on EMS***

The use of EMS by industry has been a natural progression from the early days of “command and control” environmental regulation, whereby simple compliance with environmental regulation was the only real motivation for a company to protect the environment. A good EMS not only incorporates compliance as basic operational philosophy, but it also incorporates energy conservation, pollution prevention, waste reduction and recycling of natural resources. Industry have seriously adopted EMS as they have come to recognize the value of a single systematic approach, versus trying to react to ever-changing environmental requirements, particularly new environmental regulations.

### ***Some Benefits of EMS***

***Regulatory Flexibility:*** There are numerous partnerships forming with US-EPA and state environmental programs that include serious discussion of “regulatory flexibility” based upon a company having a formal EMS or ISO14001 registration. Two examples include the national Environmental Performance track at <http://epa.gov/performance-track/> and the Wisconsin Cooperative Environmental Agreements developed by the Department of Natural Resources at <http://www.dnr.state.wi.us/org/caer/cea/ecpp/index.htm>

***Economics:*** EMS is certainly also driven by economic considerations. The benefits of energy conservation and waste reduction are obvious. For exporting industries, or even industries that do not export, there is growing recognition that global competitiveness can only be maintained and improved by becoming more proactive in environmental management and in many cases, that may mean registering to the International Organization of Standardization’s ISO 14001.

***Better Business Performance:*** The EMS model is a continuous improvement circle that is specific to environmental performance. However, implementation of an EMS not only improves environmental performance but also tends to have an impact on product quality, risk reduction, employee satisfaction, safety and health and other performance factors that make a company stronger and more competitive.

## ***What is ISO 14001 and why is it important now?***

The International Organization of Standardization (ISO), located in Geneva, Switzerland, began developing a new series of standards called ISO 14000 during the early 1990's with input from member countries including the US. The complete set of ISO 14000 standards will deal with more than just EMS; for example, product registration, labeling, life cycle analysis and more. However, the first standard, **ISO 14001**, "**The Environmental Management Standard**", deals specifically with setting up an EMS.

The release of ISO 14001 was not immediately embraced by US companies in 1996, many companies were already developing an environmental management system but the additional cost and effort to register to ISO 14001 did not seem to be a necessity. Nevertheless, implementation in the year 2001 has reached a fever pace with thousands of companies expected to register to ISO 14001 in the next few years.

Perhaps the single most important event that accelerated the pace in the US is the implementation of ISO 14001 by the Ford Motor Company and subsequently the other two major US automobile manufacturers. This move to ISO 14001 has forced thousands of parts suppliers to seek ISO 14001 registration or face losing the business of the automobile manufacturers.

The specific deadlines for supplier registration:

- ✍✍Ford, Land Rover and Jaguar suppliers: at least one plant registered by December 31, 2001 and all global sites by July 1, 2003.
- ✍✍GM suppliers: all must conform to ISO 14001 by December 31, 2002
- ✍✍Daimler-Chrysler suppliers: by January 1, 2003.

## ***What is the difference between EMS and ISO 14000?***

The major difference between just having an EMS and being registered to ISO 14001 is that ISO registrants must be 3<sup>rd</sup> party audited on a regular basis to ensure that all requirements of registration are met. This is accomplished by contracting with one of the many ISO Registrars available in the US and around the world. The cost of hiring a registrar and the fee for registration can be significant and has been a barrier to registering for most smaller companies.

## ***What does the ISO 14000 documentation consist of?***

The documentation of ISO 14001 is lengthy but not as complicated as the documentation process for ISO 9000, "*the quality standard.*" Many companies have found that if they are already registered to ISO 9000, they can easily adapt the structure for ISO 14001.

A good example of the relationship between ISO 9000 and ISO 14001 can be found with a case study of H-R Industries, Texas, the first printed wiring board company, in the US to become ISO 14001 registered. Go to the case studies located at the US-EPA web site <http://www.epa.gov/opptintr/dfc/tools/ems/ems.htm>

There are 17 elements that must be completed to become ISO 14001 registered. These are listed below and on the next page.

1. Environmental Policy: This is the statement by the company, which incorporates the commitment of that company to improving the environment.
2. Environmental Aspects and Impacts: Documenting environmental “aspects and impacts” seems to be a difficult element to understand. It is the cause and effect of any environmentally related issue; for example, energy consumption, hazardous waste, air emissions, waste water or other issues.
3. Legal and Regulatory requirements: Compliance with law and regulation is central to the success of any company that registers for ISO 14001. However, it is possible that a non-compliance issue could exist, but it should be an objective or target for resolution.
4. Objectives and Targets: Objectives and targets are established based upon the “impacts and aspects” identified during the EMS development.
5. Environmental Management: These are the actions to achieve targets and objectives.
6. Structure and Responsibility: What are the roles and responsibilities within the company that will meet all of the requirements, objectives and targets?
7. Training, Awareness and Competence: One of the strengths of ISO 14001 is that employees from the top management of the business to the bottom must know and understand the philosophy, significant aspects and impacts, targets and objectives of the company. This is rarely found in companies that do not have an EMS.
8. Communication: Newsletters, email, printed materials, posters and many other methods can be used to demonstrate communication both internally and externally.
9. EMS Documentation: Although critical to registration, documentation for ISO 14001 is much more practical and easier to understand than that of other ISO standards.
10. Document Control: This is the method used within a company to maintain the documents that are required for the EMS and ISO registration. The computer (what do you mean?) and some of the references provided later can make document control easy.
11. Operational Control: The control of operations and activities within the company should be in line with the targets and objectives of the EMS.
12. Emergency Preparedness and Response: Most companies should have this in place already, particularly if they are already required to meet other environmental regulations such as large quantity hazardous waste generation.
13. Monitoring and Measuring: A plan is only a plan and there is no real way to improve if you do not have the a method to monitor and measure results.
14. Nonconformance, Corrective, Preventive Actions: Good management practice is to correct every mistake and try to prevent them from happening again. When they cannot be immediately corrected they must be come a targeted objective.
15. Records: Good record keeping establishes the history and proof that the EMS ISO 14001 requirements are being met.

16. EMS Audit: Third party audits are one of the principal differences between just having an EMS and actually being registered for ISO 14001. (Jack, this section also, and more specifically, refers to the organization's internal audit policy)
17. Management Review: This is the "insurance" that the commitment to continuous improvement is demonstrated and carried out.

### ***How do I get started, where can I get help?***

For companies who are just getting started with developing an EMS or registering for ISO 14001, the **UW-Extension, Solid and Hazardous Waste Education Center (SHWEC)** can provide training to help you "Take the Mystery Out of EMS". Call any of our offices for more information or to request EMS training.

Stevens Point 715-346-2793

Green Bay 920-465-2707 or 920-465-2940

Milwaukee 414-227-3160

Madison 608-262-0385

Or visit our web site at <http://uwex.edu/shwec> or send an email to [shwec@uwm.edu](mailto:shwec@uwm.edu)

In addition to EMS training, SHWEC can provide a free non-regulatory environmental assessment of your facility. The assessment is a great way to identify environmental aspects and impacts as well as preparing your company for contracting a consultant or an ISO registrar. The assessment can help you save money by identifying pollution prevention, waste reduction and recycling ideas even if you do not complete an EMS.

The **Wisconsin Department of Natural Resources, Bureau of Cooperative Environmental Assistance (CEA)** is another great resource available to Wisconsin businesses and industries. Contact CEA at 608-267-9700 or visit their web site at <http://www.dnr.state.wi.us/org/caer/cea> to learn more about business sector specialists and many DNR cooperative programs 264-6153 or 608-267-9214

The **Wisconsin Department of Commerce, Small Business Clean Air Assistance Program (SBCAAP)** is another excellent resources for Wisconsin businesses particularly in the area of air regulations and permit requirements, Contact SBCAAP staff at 608-264-6153 or 608-267-9214 Or visit their web site at <http://www.commerce.state.wi.us/MT/MT-CA-sbcaap.html>

### ***Other Resources?***

There are also numerous EMS and ISO resources available to you on the Internet. A few suggested sites are provided to get you started.

- ?? The US-EPA, Design For the Environment program has developed a complete "Integrated Environmental Management System Template" which is available for download at <http://www.epa.gov/opptintr/dfe/tools/ems/ems.htm> This 58 page document can help any company or entity set up the basic structure needed for documenting an EMS and the structure for ISO 14001 registration. This web site also contains the case study of H-R Industries, Texas and other materials and videotapes.

- ?? Resources on the Internet for Environmental Management Systems is an extensive compilation of EMS-ISO 14000 related information, compiled by Burton Hammer for P2RX.ORG. The page is found at <http://www.cleanerproduction.com/ecolink/emspage.htm>
- ?? Environmental Management Systems at the North Carolina Division of Pollution Prevention and Environmental Assistance page located at <http://www.p2pays.org/iso>
- ?? The ISO 14000 Information Center at <http://www.iso14000.com> is another extensive resource.
- ?? The NSF International Strategic registrations Ltd. Web site offers free publications from their ISO 14000 registration program at <http://www.nsf-isr.org/publications/iso14000.html>

SHWEC Publication JA/09/2001  
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