



ISO 14001:2004 Simplified: Investing in Your Company's Success



- Introduction 2
- About Pinnacle Enterprise Group 2
- ISO 14001:2004 Background Information 2
- An Executive Summary of the ISO 14001:2004 Standard 3
- ISO 14001:2004 Frequently Asked Questions (FAQs) 3
- ISO 14001:2004 Simplified: Index of Requirements 5
- ISO 14001:2004 Simplified: Documentation Requirements 9
 - ISO 14001:2004 Required Documented Procedures 9
 - ISO 14001:2004 Required Records 9
 - ISO 14001:2004 Process-based EMS Model 11
 - ISO 14001:2004 Typical EMS Documentation 12
- ISO 14001:2004 & OHSAS 18001:2007: Integrated EHS 15

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Introduction

A successful company. . . A better environment. . . A sustainable world. The ISO 14001:2004 standard is the environmental business model that is helping to make all of these things a reality, one company at a time. Perhaps you have been impressed with the success stories you've heard about companies that have already achieved registration, or perhaps you are being required by your customers to implement an ISO 14001-based system. The pleasant surprise about ISO 14001 is that in addition to helping the environment, the standard can help your company save money in ways you may have never thought possible. Whether you are new to ISO 14001 or you are an ISO 14001 expert, Pinnacle Enterprise Group (Pinnacle) will help you jumpstart your implementation initiative and make sure you stay on the right track. Pinnacle's *Lean EMS*[®] approach rationally and practically simplifies ISO 14001:2004 implementation so that your company can reach its environmental and business objectives in record time.

About Pinnacle Enterprise Group

Pinnacle is a process engineering, management system implementation, and organizational development firm. Pinnacle provides a broad range of custom-tailored consulting and training services designed to help small, medium, and large companies achieve compliance and certification/registration to ISO 14001:2004 and/or OHSAS 18001:2007. Whether your objective is to be certified and/or to improve your existing environmental, health, & safety management system, Pinnacle will customize a program to fit your needs.

Pinnacle's *Lean EMS*[®] and *Lean EHS*[®] approach is proven to be the most efficient and effective method for achieving compliance and certification to ISO 14001:2004 and/or OHSAS 18001:2007. While the industry norm for implementation of an ISO 14001:2004 and/or OHSAS 18001:2007 is 12 month or more, Pinnacle's customized consulting and training services achieve the objective in just 2-4 months, with a more sophisticated EMS and EHS platform. We have a 100% success rate and offer a registration guarantee.

To learn more about Pinnacle's services and to schedule an on-line *Lean EMS*[®] and *Lean EHS*[®] demonstration, please contact Pinnacle at **248-706-1740** or visit us on the web at **www.PinnacleEG.com**.

ISO 14001:2004 Background Information

The International Organization for Standardization released the ISO 14001 environmental standard at the end of 1996. Since then, companies all over the world have been using the standard as a business system platform for realizing environmental and bottom line benefits.

The acceptance of the standard and the wide spread number of certifications around the globe have helped to validate the value an ISO 14001 system brings to a company. The need to achieve ISO 14001 certification is especially high in Japanese and German companies. In

these two countries, the pressure to achieve ISO 14001 started as soon as the standard was finalized. Many multinational firms headquartered in these two countries achieved worldwide certifications years ago. The pressure in the United States to achieve ISO 14001 certification did not start to build for most companies until the year 2008. The companies with Japanese and German customers felt the pressure first, and now the American automotive industry has realized the power of ISO 14001 and started to apply pressure to its supply base. In 2008, a requirement was placed on all Tier I suppliers to the Big Three that they become ISO 14001 compliant.



An Executive Summary of the ISO 14001:2004 Standard

Just as ISO 9001 made product quality everyone's responsibility, ISO 14001 brings the issue of environmental performance and facility efficiency out of the environmental office and makes the environment everyone's business. ISO 14001 is a valuable business model platform, that when effectively implemented, can bring a company enormous savings through reductions in energy costs, waste disposal fees and permitting costs, just to name a few. With ISO 14001, a company can demonstrate its commitment to improving the environment while saving money.

The ISO 14001 environmental business model platform was developed for forward-thinking lean companies who are interested in building efficiencies in parts of the organization that are left out of the ISO 9001 based business system. Just think what improvements could be made in the areas of equipment maintenance, waste disposal, reduction of hazardous waste streams, and the conservation of natural resources. Companies actually see that the ISO 14001 implementation costs are recouped within the first year through reductions in water and electricity use and improved waste management practices.

The standard requires an organization to develop an environmental policy, identify its environmental aspects, and determine which of those aspects are considered significant. The company develops environmental objectives, targets, and a management plan for how to reach these goals. A company must have a system in place for knowing which environmental regulations apply to its operations and a system in place for periodically checking its own compliance. Furthermore, management must review the continued suitability and effectiveness of the environmental management system (EMS), internal audits must be effectively performed, and corrective actions taken when necessary.

ISO 14001:2004 Frequently Asked Questions (FAQs)

Why the Customer Pressure to Comply with ISO 14001?

There are a number of reasons why customers are demanding their suppliers to become ISO 14001 certified. One reason customers want ISO 14001 is to increase their level of confidence that the supplier will continue to be in business in the future. It is a well-know fact that serious corporate environmental problems can either shut down or bankrupt a company. Another reason why customers want ISO 14001 is that they want their suppliers to realize as many financial efficiencies as possible. With ISO 9001, an organization can be relatively sure that a supplier has achieved high efficiencies in the production areas. Now it is time to move on to the facilities operations and ensure that all the support functions have been optimized. The overall goal of ISO 14001 is the improvement of the environment, but it is the added benefits of reduced business risk and increased operating efficiencies that have brought the acceptance of the standard to what it is today. Corporations, as a whole, only continue with programs that are successful and make sense. ISO 14001 is one of these programs.

What about Legal Compliance and the Potential for Incurring Future Legal Problems?

Although ISO 14001 compliant companies are generally in legal compliance with environmental regulations, this is not a pre-requisite for becoming certified. You may be questioned on the effectiveness of your corrective action system if there are recurrent problems, but the ISO 14001 auditors who come on-site are not compliance experts. Nor is the checking of legal compliance within the scope of the audit. If the audit team performs their job in a professional manner and follows its Accreditation guidelines to the letter, there should be no possibility for having future legal problems due to ISO 14001 audit findings.



Is it possible to integrate a quality management system and an environmental management system?

Yes. It is not only possible, but it is advisable to integrate ISO 14001 requirements with your established ISO 9001 based management system to take advantage of the investment you have already made in your business operating system. The degree to which you choose to integrate depends on individual choice, availability of resources, and the organizational structure.

ISO 9001 based standards bring the quality and environmental requirements into closer harmony than ever before. A company can use the same internal programs to perform internal audits, management reviews, document control, tracking of training needs, corrective and preventive action, calibration, and establishment of objectives and targets.

What value does ISO 14001 bring to a company?

Just as ISO 9001 made the business system and product quality everyone's responsibility, ISO 14001 brings the issue of environmental performance and facility efficiency out of the environmental office and makes the environment everyone's business. ISO 14001 is a valuable business model platform, that when effectively implemented, can bring a company enormous savings through reductions in energy costs, waste disposal fees and permitting costs, just to name a few. With ISO 14001, a company can demonstrate its commitment to improving the environment while saving money.

An ISO 14001 environmental business model platform was developed for forward-thinking lean companies who are interested in building efficiencies in parts of the corporation that are left out of the ISO 9001 based business system. Just think what improvements could be made at your company in the areas of equipment

maintenance, waste disposal, reduction of hazardous waste streams, and the conservation of natural resources. Most companies actually see that the 14001 certification costs are recouped within the first year through reductions in water and electricity use and improved waste management practices.

How long does it take to implement an ISO 14001 system?

A typical company that already has an ISO 9001 based management system can achieve ISO 14001 compliance/certification within 3-6 months with Pinnacle's support. The actual amount of time will of course depend on several variables. Several things that will have an effect on the length of time required are: the human resources available to work on the project (in addition to their normal activities), whether Pinnacle is brought in to guide the project, and whether Top Management has been able to muster sincere support for the initiative.

Like with ISO 9001, it is important to obtain clear direction and support from Top Management prior to committing to an implementation project. The implementation of ISO 14001 involves many different disciplines and it is important to get "buy in" for the program to be successful.

Another important factor in the time required to achieve ISO 14001 compliance or certification is how complex the environmental aspects of a business are. If a company has a large number of environmental aspects such as the use of toxic chemicals, the generation of hazardous waste, and the use of large quantities of water throughout the company, it is fair to say that implementation may take longer than it would for a service company with a smaller environmental footprint.



ISO 14001:2004 Simplified: Index of Requirements

4.1 GENERAL REQUIREMENTS

- Implement, document, maintain, and continually improve an ISO 14001:2004 based environmental management system.
- Define and document the scope of the environmental management system.

4.2 ENVIRONMENTAL POLICY

- Formulate, document, and implement an environmental policy appropriate to the environmental impacts of your organization's activities, products, and services.
- Include in the environmental policy:
 - A framework for setting environmental objectives and targets,
 - A commitment to continual improvement,
 - A commitment to prevention of pollution, and
 - A commitment to comply with environmental laws and regulations.
- Communicate environmental policy to all employees.
- Make the environmental policy available to the public.

4.3 PLANNING

4.3.1 Environmental aspects

- Document and implement a process to:
 - Identify and document environmental aspects of your organization's activities, products, and services,
 - Select and document significant environmental aspects using a defined and objective methodology for evaluating importance of environmental impacts, and
 - Update environmental aspects when changes are made to your organization's activities, products, and services.
- Select those environmental aspects that can be controlled, or over which your organization can be expected to have influence.

4.3.2 Legal and other requirements

- Document and implement a process to:
 - Identify and have access to any applicable legislative, regulatory and other requirements, and
 - Link these requirements to specific environmental aspects.

4.3.3 Objectives, targets and programs

- Establish and maintain documented and measurable environmental objectives and targets at all relevant functions within your organization.
- Establish and maintain documented and measurable environmental objectives and targets for all significant environmental aspects.
- When setting environmental objectives and targets ensure that:
 - All applicable legislative, regulatory and other requirements are considered,
 - Views of persons or groups concerned with or affected by your organization's environmental performance are considered, and
 - The environmental policy, prevention of pollution, and continual improvement are considered.
- Establish, document, and maintain programs to achieve each environmental objective and target.
- Within each program:



- Assign responsibility for achieving environmental objectives and targets at each relevant function and level of the organization,
- Specify the means and method by which to achieve environmental objectives and targets, and
- Define the time frame for achieving environmental objectives and targets.
- Review and update programs to account for new developments and new or modified activities, products or services.

4.4 IMPLEMENTATION AND OPERATION

4.4.1 Resources, roles, responsibility and authority

- Provide adequate resources to implement, maintain, and continually improve the environmental management system.
- Define, document and communicate authorities, roles, and responsibilities for operating the environmental management system.
- Appoint a management representative responsible for:
 - Ensuring conformance with ISO 14001:2004,
 - Reporting on the performance of the environmental management system, and
 - Making recommendations for its improvement.

4.4.2 Competence, training and awareness

- Qualify personnel that can potentially cause a significant environmental impact on the basis of appropriate education, training, and/or experience.
 - Keep records of education, training, and experience.
- Identify training needs associated with environmental aspects.
 - Provide appropriate training and keep training records.
- Document and implement a process to make all employees aware of:
 - Environmental policy, procedures/processes, and environmental management system requirements,
 - Environmental aspects and actual or potential impacts of each individual's work,
 - Environmental management system roles and responsibilities, and
 - Consequences of departing from procedures/processes.

4.4.3 Communication

- Document and implement a process for internal communication regarding environmental issues.
- Document and implement a process for receiving, documenting and responding to communication from external interested parties.
- Decide whether to communicate regarding significant aspects outside of the organization.
 - Document decision.
 - If yes, define how.

4.4.4 Documentation

- Describe the environmental management system with:
 - Environmental policy,
 - Environmental objectives and targets,
 - Scope of the system,
 - Main components of the system and how they interact
 - Documents and records required by ISO 14001:2004, and
 - Documents and records deemed necessary by the organization to implement and maintain the system.

4.4.5 Control of documents

- Document and implement a process to:



- Review and approve documents prior to use,
- Review and approve changes or revisions prior to use,
- Identify changes and revision status,
- Make the latest revisions accessible at the points of use,
- Identify documents and keep them legible,
- Identify important external documents and control their internal distribution, and
- Remove obsolete documents from points of use and identify historical copies of obsolete documents to prevent unintended use.

4.4.6 Operational control

- Identify processes and activities associated with significant environmental aspects.
- Plan, document, and implement processes to control activities associated with significant environmental aspects.
 - Define operational criteria and instructions to ensure conformance with the environmental policy, objectives, and targets.
 - Communicate environmental processes, operating criteria, and requirements to suppliers of products and services associated with significant environmental aspects.

4.4.7 Emergency preparedness and response

- Document and implement a process to:
 - Identify potential emergencies and accidents that can cause an environmental impact,
 - Develop and document emergency preparedness and response plans/instructions for each potential emergency or accident
 - Test emergency preparedness and response plans/instructions periodically (where possible and practical), and
 - Review and revise emergency preparedness and response plans/instructions, as needed, especially after a test or actual emergency.

4.5 CHECKING

4.5.1 Monitoring and measurement

- Document and implement a process to monitor and measure key characteristics of processes and activities that are associated with significant environmental aspects.
 - Document (keep records of) monitoring and measuring activities.
- Calibrate or verify monitoring and measuring equipment, and maintain calibration/verification records.
- Maintain monitoring and measuring equipment, and maintain maintenance records.

4.5.2 Evaluation of compliance

- Document and implement a process to periodically evaluate compliance with applicable environmental laws and regulations and with other requirements to which the organization subscribes
 - Keep records of the periodic compliance evaluation.

4.5.3 Nonconformance, corrective action and preventive action

- Document and implement a process to:
 - Identify and investigate actual and potential nonconformances and when appropriate take action to mitigate environmental impacts.
 - Initiate and implement corrective actions to prevent recurrence of nonconformances.
 - Initiate and implement preventive actions to prevent occurrence of potential nonconformances.
 - Keep records of corrective and preventive actions.
 - Review effectiveness of corrective and preventive actions.



- Change environmental management system documents when necessary.

4.5.4 Control of records

- Maintain records necessary to demonstrate conformance with the organization's environmental management system requirements.
- Maintain records necessary to demonstrate conformance with ISO 14001:2004 requirements.
- Document and implement a process to identify, store, protect, retrieve, retain, and dispose of records.
- Keep records legible, identifiable, and traceable.

4.5.5 Internal audit

- Document and implement a process to internally audit the environmental management system at planned intervals.
 - Ensure objectivity and impartiality of the internal auditors.
 - Define responsibilities and requirements for:
 - Planning and conducting the audits,
 - Reporting audit results, and
 - Retaining associated records.
 - Consider environmental importance of the organization's processes and activities and the results of previous audits when planning internal audits.
 - Assess compliance with ISO 14001:2004.
 - Assess effectiveness of the environmental management system implementation and maintenance.
 - Report results of internal audits to management.

4.6 MANAGEMENT REVIEW

- Periodically conduct management reviews of the environmental management system to ensure its continuing suitability, adequacy, and effectiveness.
 - Assess opportunities for improvement.
 - Assess the need to change the environmental management system, including:
 - Changes to the environmental policy,
 - Changes to environmental objectives, and
 - Changes to environmental targets and programs/
 - Minimum management review inputs:
 - Internal audit results,
 - Evaluation of compliance with legal and other requirements,
 - Communication from external parties, including complaints,
 - Environmental performance,
 - Status of objectives, targets, and programs,
 - Status of corrective and preventive actions,
 - Follow-up to action items from previous management reviews,
 - Planned changes that could affect environmental aspects,
 - Changes to legal and other requirements, and
 - Recommendations for improvement.
 - Document any decisions and actions (outputs) regarding changes and improvements to the environmental management system.
- Keep records of the management review and its results.



ISO 14001:2004 Simplified: Documentation Requirements

ISO 14001:2004 requires that at a minimum your environmental management system be rationalized and articulated by:

- **11 Documented Procedures** (Pinnacle refers to these as Support Processes or SPs),
- an **EMS Scope** statement,
- an **Environmental Policy**,
- at least **14 Record** types, and
- a description of the **main EMS elements, including their interaction and related documents**.

ISO 14001:2004 Required Documented Procedures (SPs):

1. Identification of Environmental Aspect and their Significance
2. Identification of Legal and Other Requirements
3. EMS Awareness (aka: Training)
4. Internal and External Communication
5. Document Control
6. Identification of Potential Emergencies and Emergency Preparedness and Response
7. Monitoring and Measurement of Significant Aspects
8. Evaluation of Compliance with Legal and Other Requirements
9. Corrective and Preventive Action
10. Record Control
11. Internal Audits

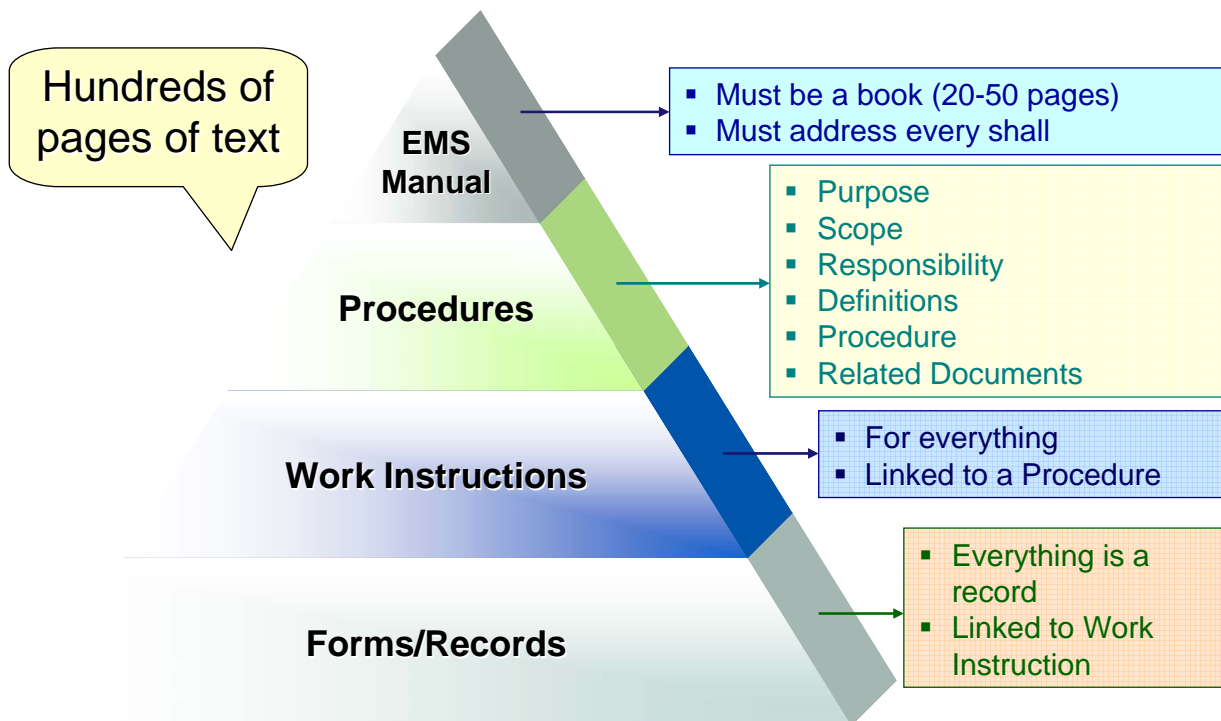
ISO 14001:2004 Required Records:

| Clause | Description of Required Record |
|----------|-----------------------------------------------------------------------------------------------------|
| 4.3.1 | Evidence that environmental aspects and associated impacts have been identified and kept up to date |
| 4.3.3 | Environmental objectives and targets |
| 4.3.3 | Programs for achieving objectives and targets, including defined responsibilities and time frames |
| 4.4.1 | Defined EMS roles, responsibilities, and authorities |
| 4.4.2 | Employee qualification based on education, training and/or experience |
| 4.4.2 | Training records |
| 4.4.3 a) | Documentation of any communication received from external interested parties |
| 4.4.3 | Decision regarding whether to communicate externally about significant environmental aspects |
| 4.5.1 | Environmental performance monitoring information |
| 4.5.1 | Results of calibration and verification of measuring equipment |
| 4.5.2 | Periodic evaluation of compliance with legal and other requirements |

| | |
|-------|---------------------------------------------------------|
| 4.5.3 | Results of corrective and preventive action |
| 4.5.5 | Internal audit planning, results, and follow-up actions |
| 4.6 | Records of the management review |

The format and form of Records is important for their effective use. Records are typically "forms" designed to formally capture evidence of process effectiveness and results. Furthermore, depending on the applicability of ISO 14001:2004 to your organization, some records may be omitted.

Unfortunately, ISO 14001:2004 documentation requirements are traditionally misunderstood resulting in the following false paradigm being applied to an environmental management system:



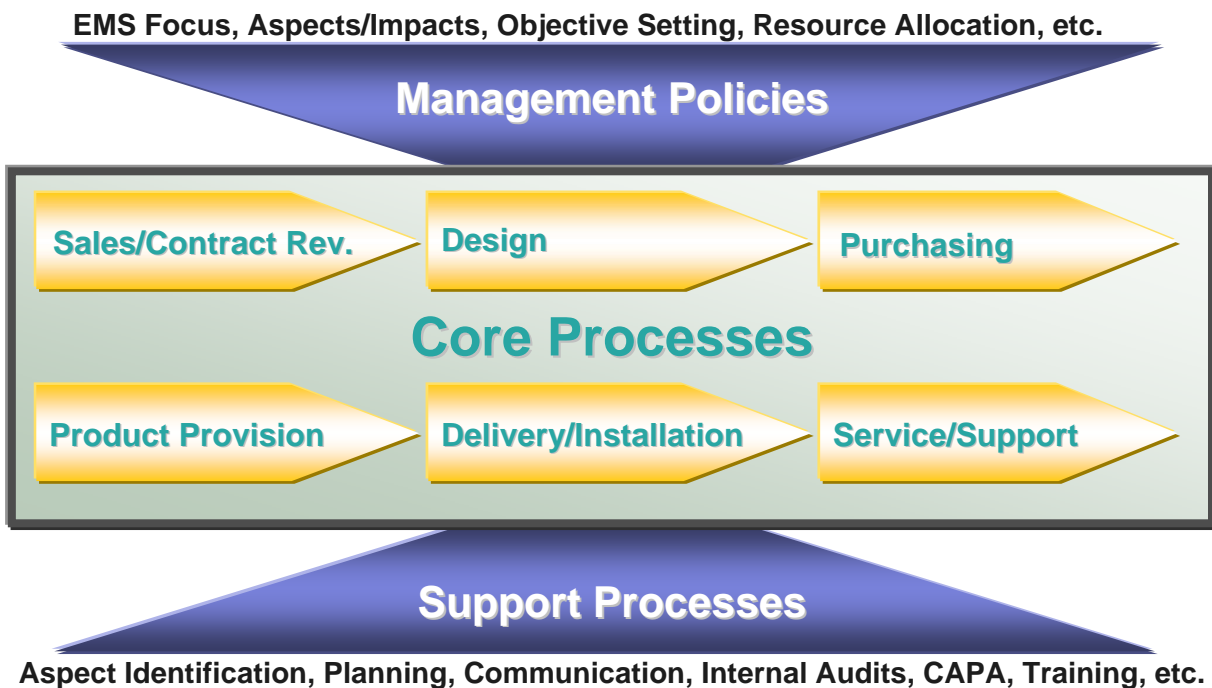
While this paradigm is appropriate for describing a documentation structure, companies rarely organize their business processes in this way.

Process-based EMS Model:

Pinnacle advocates a more realistic and practical process-based model. Pinnacle's management system model consists of three major components:

1. **Management Policies (MP)** Policies that set the mission, vision, and direction of the organization.
2. **Support Processes (SP)** Processes that facilitate, monitor, control, and improve the management system, but do not directly impact the environment.
3. **Core Processes (CP)** A set of sequenced and interrelated processes defining and controlling all product and service realization activities. These are processes potentially or actually directly impact the environment.

The figure below illustrates the relationship of these management system components:



In turn, these three components are supported by:

4. **Work Instructions (WI)** Specific or individual task level instructions that support the fulfillment of Core or Support Processes.
5. **Forms/Records (F)** Standardized forms that, when completed, collect information that is retained as records. A form becomes a record when it is written on or completed. When forms contain enough task level instructions they can replace Work Instructions.



Typical EMS Documentation:

The following table shows the typical documentation needed to address each clause and requirement of ISO 14001:2004:

| Clause | Description of Requirement | Document Type | Pinnacle <i>Lean EMS</i> [®] Document Model |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4.1 | Scope of the EMS (also see 4.4.4) | EMS Map/EMS Manual | EM-4440 Lean EMS [®] Map MP-4000 EMS Policies |
| 4.2 | Environmental Policy (also see 4.4.4) | MP | MP-4000 EMS Policies |
| 4.3.1 | System for the identification of environmental aspects. The process must produce a list of environmental aspects with significant environmental impacts. The list must show evidence revision and updates over time. (also see 4.3.3) | SP Form/Record that lists significant aspects with evidence of periodic revision | SP-4300 EMS Aspects, Objectives, Targets, & Programs WI-4300-01 Identification of EMS Aspects WI-4300-02 Significance of EMS Aspects F-4300-01 EMS Aspect Evaluation |
| 4.3.2 | System for identifying and having access to legal and other requirements. System must include the determination of how requirements apply to the environmental aspects identified in 4.3.1. (directly linked to 4.5.2) | SP Log/list of applicable legal and other requirements that includes the location of each requirement. | SP-4320 Legal & Regulatory Compliance WI-4320-01 Preliminary Research Survey F-4451-01 External Documents & Requirements Log |
| 4.3.3 | In relation to significant environmental aspects and applicable legal and other requirements, establish measurable environmental objectives and targets at each functional level. (also see 4.5.1) | Objectives & targets defined for or within every CP that has potential or actual environmental impact | SP-4300 EMS Aspects, Objectives, Targets, & Programs F-4300-02 Objective & Target Management Sheet F-4510-01 Objectives Matrix |
| 4.3.3 | Establish program(s) for achieving environmental objectives and targets, including responsibility and time frame for achievement of objectives and targets (a.k.a.: Program Planning & Management). | Optional SP or Work Instruction Program Plan Records | SP-4300 EMS Aspects, Objectives, Targets, & Programs F-4300-02 Objective & Target Management Sheet F-4510-01 Objectives Matrix |
| 4.4.1 | Definition and documentation of environmental roles, responsibilities, and authorities at all levels. | In every CP/SP &/or R & A Matrix | MP-4000 EMS Policies <i>F-4410-01 Organizational Chart (customer defined)</i> |
| 4.4.1 | Management Representative with defined EMS responsibilities and authority | Org. Chart, Job Description, &/or R & A Matrix | MP-4000 EMS Policies <i>F-4410-01 Organizational Chart (customer defined)</i> |



| | | | |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4.4.2 | <p>Define education, training, and/or experience requirements for everyone that can have significant environmental impact.</p> <p>Competency records (education, training, experience) for personnel performing tasks that can cause environmental impacts</p> <p>Assessment and identification of training needs.</p> <p>Provision of training and validation of training effectiveness.</p> | <p>Optional SP</p> <p>Training Matrix & Job Description</p> <p>Qualification Requirements per Function.</p> <p>Training Records</p> | <p>SP-4420 Training</p> <p>WI-4420-01 Training Curriculum</p> <p>F-4420-01 Training Matrix</p> <p>F-4420-02 Training Assessment Schedule</p> <p>F-4420-03 Training Needs Assessment</p> |
| 4.4.2 a & d | <p>Employee/staff awareness training system</p> | <p>SP</p> <p>Training Records</p> | <p>SP-4420 Training</p> <p>WI-4420-01 Training Curriculum</p> <p>F-4420-01 Training Matrix</p> <p>F-4420-02 Training Assessment Schedule</p> <p>F-4420-03 Training Needs Assessment</p> |
| 4.4.3 | <p>Internal & external communication system</p> <p>Decision regarding external communication about environmental aspects. If decision is to communicate, then define method.</p> | <p>Communication SP &/or MP</p> <p>Records of Decision (e.g. during Management Review)</p> | <p>SP-4431 Internal Communication</p> <p>SP-4432 External Communication</p> <p>F-4432-01 External Communication Log</p> |
| 4.4.4 | <p>Description of the elements of the EMS, their interaction, and link to related documentation, including EMS policy, objectives and targets (also see 4.4.5)</p> | <p>EMS Map/Manual, SPs, CPs, MPs, & Objectives Matrix</p> | <p>EM-4440 Lean EMS® Map</p> <p>F-4440-01 Management System Structure (Master List)</p> |
| 4.4.5 | <p>Document control system</p> | <p>SP</p> | <p>SP-4450 Internal Document Control</p> <p>F-4450-01 Document Change Notice</p> <p>F-4440-01 Management System Structure (Master List)</p> <p>SP-4451 External Document Control</p> <p>F-4451-01 External Documents & Requirements Log</p> |



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|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4.4.6 | Documented operational processes with operating criteria <i>NOTE: The requirements of this sub-clause are intended to address the need to proceduralize all operations and activities that are associated with environmental aspects and legal or regulatory requirements. This is commonly referred to as "Product Realization" and/or "Process Control."</i> | CPs & Work Instruction (if needed) | <i>Operational controls are typically integrated into existing documented product & service realization processes. In this case no additional documents are needed. If these processes are not currently documented, Pinnacle can help "process map" them.</i> <i>Examples of additional processes that may need to be created are Recycling, Waste Handling, Water Treatment, Natural Resource Utilization Reduction Programs, etc.</i> |
| 4.4.7 | System for identifying potential emergencies or accidents that can cause environmental impact. The system must include the development and testing of emergency preparedness and response plans & procedures. | SP WIs for emergency responses Records of tests | SP-4470 Emergency Preparedness & Response WI-4470-01 Emergency Response Programs (for identification of potential accidents/emergencies & for developing response programs) <i>WI-4470-02 thru WI-4470-XX Emergency Response Programs (customer defined)</i> F-4470-01 Potential Accidents & Emergencies |
| 4.5.1 | System for monitoring & measurement of operations and activities (processes) relating to environmental impacts. Equipment use to measure and monitor must be calibrated or verified and appropriate records maintained. | Integrated into every CP with an MP stating this Calibration or verification records | SP-4510 Monitoring Significant EMS Aspects EF-4510-01 Objectives Matrix |
| 4.5.2 | System for periodic evaluation of compliance with environmental laws and requirements (directly linked to 4.3.2) | Included in SP for 4.3.2 &/or MP Records of Compliance Evaluations | SP-4320 Legal & Regulatory Compliance F-4320-01 Environmental Compliance Checklist |
| 4.5.3 | System for dealing with non-conformances and Corrective & Preventive Action. | SP | SP-4530 Corrective/Preventive Action & Continual Improvement F-4530-01 Corrective/Preventive Action Request |
| 4.5.4 | Record control system | SP | SP-4540 Records Management F-4440-01 Management System Structure (Master List) |
| 4.5.5 | EMS internal audit system | SP | SP-4550 Internal Audit F-4550-01 Internal Audit Schedule F-4550-02 Internal Audit Checklist F-4550-03 Internal Audit Report |



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|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|-----------------------------------------------------------------|
| 4.6 | Management Review records <i>NOTE: Although a SP is not required, it is highly recommended that an organization develop a SP to address Management Review.</i> | Mgmt Review Record & optional Mgmt. Review SP (recommended) | SP-4600 Management Review F-4600-01 Management Review Record |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|-----------------------------------------------------------------|

ISO 14001:2004 & OHSAS 18001:2007: Integrated EHS

The essential difference between ISO 14001:2004 and OHSAS 18001:2007 is that ISO 14001:2004 focuses on managing your organization's impact on the external environment, while OHSAS 18001:2007 focuses on managing your organization's internal environment to ensure a safe and healthy workplace. Structurally, the two standards are essentially identical. The requirements are essentially identical. Consequently, the processes and documentation need to implement and certify to OHSAS 18001:2007 are essentially the same. Only the intent and focus are different. As with the EMS, Pinnacle advocates a practical process-based model for an integrated environmental, health, and safety management system (EHS).

The following table provides a direct clause-by-cause comparison of ISO 14001:2004 and OHSAS 18001:2007:

| OHSAS 18001:2007 Clause | ISO 14001:2004 Clause | Pinnacle <i>Lean EHS</i> [®] Document Model |
|----------------------------------------------------------------------|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4.1 General Requirements | 4.1 General Requirements | EM-4440 Lean EHS [®] Map MP-4000 EHS Policies |
| 4.2 OH&S Policy | 4.2 Environmental Policy | MP-4000 EHS Policies |
| 4.3 Planning | 4.3 Planning | Title Only |
| 4.3.1 Hazard Identification, Risk Assessment, & Determining Controls | 4.3.1 Environmental Aspects | SP-4300 EHS Aspects, Objectives, Targets, & Programs WI-4300-01 Identification of EHS Aspects WI-4300-02 Significance of EHS Aspects F-4300-01 EHS Aspect Evaluation |
| 4.3.2 Legal and Other Requirements | 4.3.2 Legal and Other Requirements | SP-4320 Legal & Regulatory Compliance WI-4320-01 Preliminary Research Survey F-4451-01 External Documents & Requirements Log |
| 4.3.3 Objectives and Programs | 4.3.3 Objectives, Targets and Program(s) | SP-4300 EHS Aspects, Objectives, Targets, & Programs F-4300-02 Objective & Target Management Sheet F-4510-01 Objectives Matrix |
| 4.4 Implementation and Operation | 4.4 Implementation and Operation | Title Only |



| | | |
|----------------------------------------------------------------------|------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4.4.1 Resources, Roles, Responsibility, Accountability and Authority | 4.4.1 Resources, Roles, Responsibility and Authority | MP-4000 EHS Policies <i>F-4410-01 Organizational Chart (customer defined)</i> |
| 4.4.2 Competence, Training and Awareness | 4.4.2 Competence, Training and Awareness | SP-4420 Training WI-4420-01 Training Curriculum F-4420-01 Training Matrix F-4420-02 Training Assessment Schedule F-4420-03 Training Needs Assessment |
| 4.4.3 Communication, Participation, and Consultation | NA | Title Only |
| 4.4.3.1 Communication | 4.4.3 Communication | SP-4431 Internal Communication SP-4432 External Communication F-4432-01 External Communication Log |
| 4.4.3.2 Participation and Consultation | NA | <i>The requirements of this sub-clause are addressed by the effective implementation & use of other processes & documents such as:</i> MP-4000 EHS Policies SP-4300 EHS Aspects, Objectives, Targets, & Programs <i>F-4410-01 Organizational Chart (customer defined)</i> SP-4420 Training WI-4420-01 Training Curriculum SP-4431 Internal Communication SP-4470 Emergency Preparedness & Response WI-4470-01 Emergency Response Programs (for identification of potential accidents/emergencies & for developing response programs) <i>WI-4470-02 thru WI-4470-XX Emergency Response Programs (customer defined)</i> SP-4530 Corrective/Preventive Action & Continual Improvement |
| 4.4.4 Documentation | 4.4.4 Documentation | EM-4440 Lean EHS® Map F-4440-01 Management System Structure (Master List) |



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| 4.4.5 Control of Documents | 4.4.5 Control of Documents | SP-4450 Internal Document Control F-4450-01 Document Change Notice F-4440-01 Management System Structure (Master List) SP-4451 External Document Control F-4451-01 External Documents & Requirements Log |
| 4.4.6 Operational Control | 4.4.6 Operational Control | <p><i>Operational controls are typically integrated into existing documented product & service realization processes. In this case no additional documents are needed. If these processes are not currently documented, Pinnacle can help "process map" them.</i></p> <p><i>Examples of additional processes that may need to be created are Recycling, Waste Handling, Water Treatment, Natural Resource Utilization Reduction Programs, etc.</i></p> |
| 4.4.7 Emergency Preparedness and Response | 4.4.7 Emergency Preparedness and Response | SP-4470 Emergency Preparedness & Response WI-4470-01 Emergency Response Programs (for identification of potential accidents/emergencies & for developing response programs) <i>WI-4470-02 thru WI-4470-XX Emergency Response Programs (customer defined)</i> F-4470-01 Potential Accidents & Emergencies |
| 4.5 Checking and Corrective Action | 4.5 Checking | Title Only |
| 4.5.1 Performance Measurement and Monitoring | 4.5.1 Monitoring and Measurement | SP-4510 Monitoring Significant EHS Aspects EF-4510-01 Objectives Matrix |
| 4.5.2 Evaluation of Compliance | 4.5.2 Evaluation of Compliance | SP-4320 Legal & Regulatory Compliance F-4320-01 Environmental Compliance Checklist |
| 4.5.3 Incident Investigation, Nonconformity, Corrective Action and Preventive Action | NA | Title Only |



| | | |
|---------------------------------------------------------|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4.5.3.1 Incident Investigation | NA | SP-4470 Emergency Preparedness & Response WI-4470-01 Emergency Response Programs (for identification of potential accidents/emergencies & for developing response programs) <i>WI-4470-02 thru WI-4470-XX Emergency Response Programs (customer defined)</i> F-4470-01 Potential Accidents & Emergencies SP-4530 Corrective/Preventive Action & Continual Improvement F-4530-01 Corrective/Preventive Action Request |
| 4.5.3.2 Nonconformity, Corrective and Preventive Action | 4.5.3 Nonconformity, Corrective and Preventive Action | SP-4530 Corrective/Preventive Action & Continual Improvement F-4530-01 Corrective/Preventive Action Request |
| 4.5.4 Control of Records | 4.5.4 Control of Records | SP-4540 Records Management F-4440-01 Management System Structure (Master List) |
| 4.5.5 Internal Audit | 4.5.5 Internal Audit | SP-4550 Internal Audit F-4550-01 Internal Audit Schedule F-4550-02 Internal Audit Checklist F-4550-03 Internal Audit Report |
| 4.6 Management Review | 4.6 Management Review | SP-4600 Management Review F-4600-01 Management Review Record |

To learn more about Pinnacle's services and to schedule an on-line *Lean EMS*[®] and *Lean EHS*[®] demonstration, please contact Pinnacle at **248-706-1740** or visit us on the web at **www.PinnacleEG.com**.