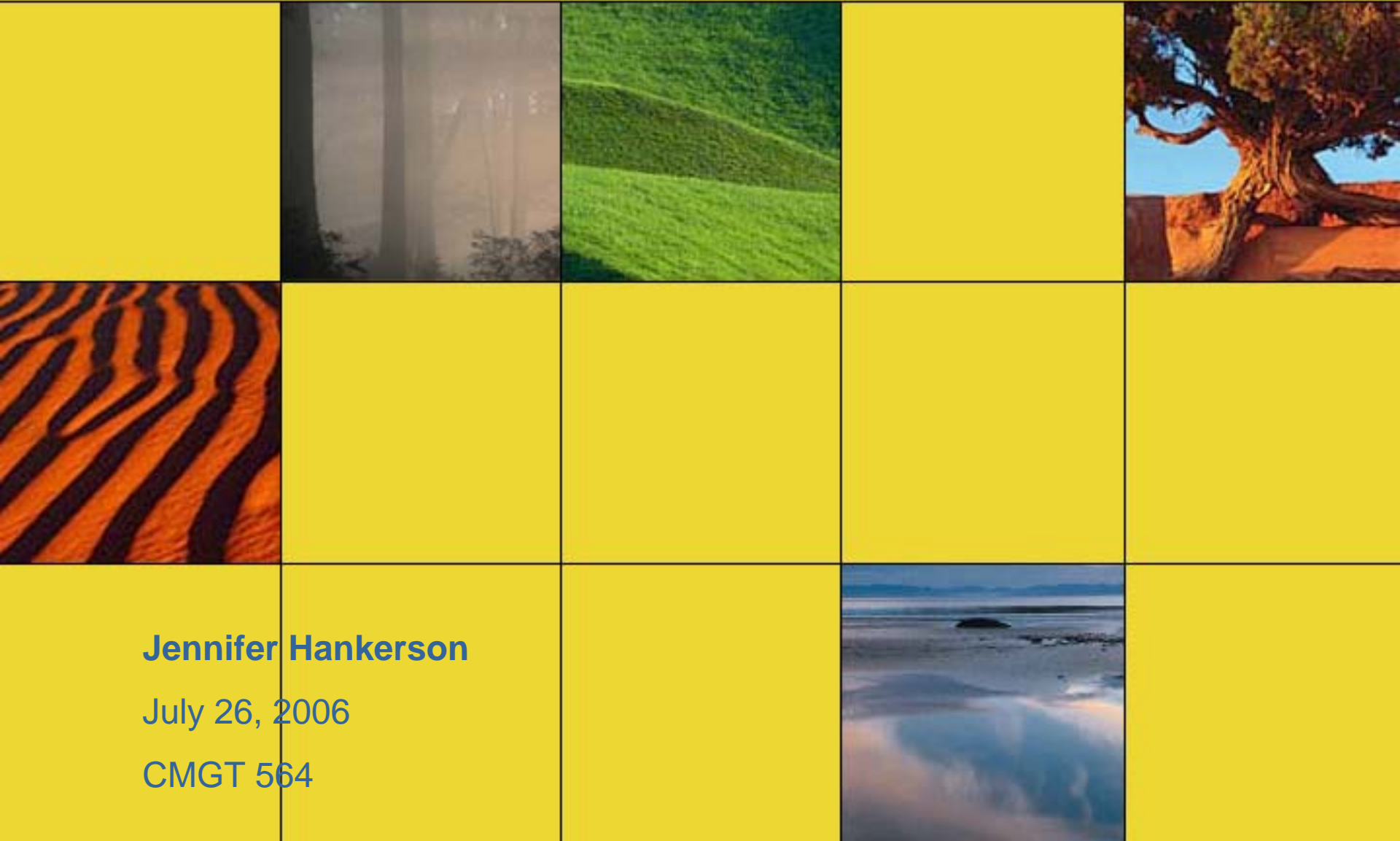


# Environmental Management Systems

## ISO 14001



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CMGT 564



## ISO 14001

### Environmental Management Systems – Requirements with Guidance for Use

- History of ISO 14001
- Structure of ISO 14001
- Relationship to Other Standards
- Value of ISO 14001
- Use of ISO 14001 in Governmental Regulations
- Conclusion



# History of ISO

- The International Organization for Standards is a worldwide federation of standards bodies and is the world's largest developer of standards.
- The ISO began in 1947 to “facilitate the international coordination and unification of industrial standards”
- From the 25 original countries, it now consists of 157 countries with one member per country.
- The work of preparing international standards is normally carried out through ISO technical committees. The committees are made up of experts from different industries.
- In the last 60 years, more than 15,000 standards have been published.



# History of ISO 14001

- In June 1992, the British Standards Institute published BS 7750, the first Environmental Management Systems standard. This standard set the stage for the world to take a look at their environmental practices.



# History of ISO 14001

- In 1996, the International Organization for Standardization published standard 14001 Environmental Management Systems – Requirements with Guidance for Use.



International  
Organization for  
Standardization

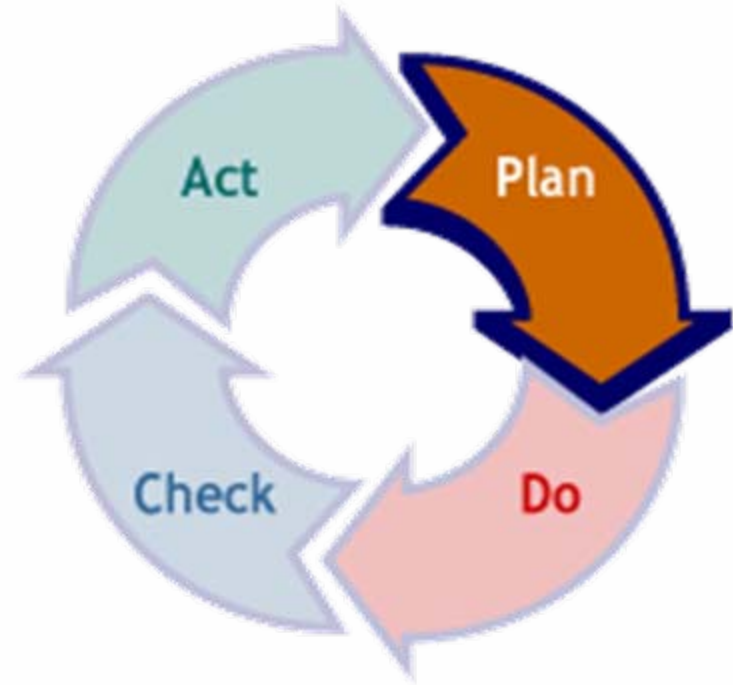


## History of ISO 14001

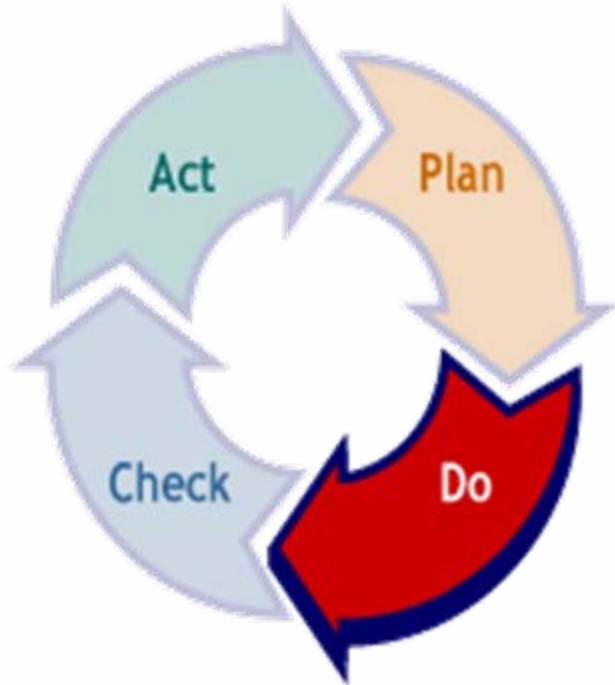
- ISO 14001 was first published in September 1996 and amended in November 2004. It was created and amended by Technical Committee ISO/TC207, *Environmental Management*, Subcommittee SC1 *Environmental Management Systems*.

# Structure of ISO 14001

- Plan – Establish the objectives and processes necessary to deliver results in accordance with the organizations environmental policy



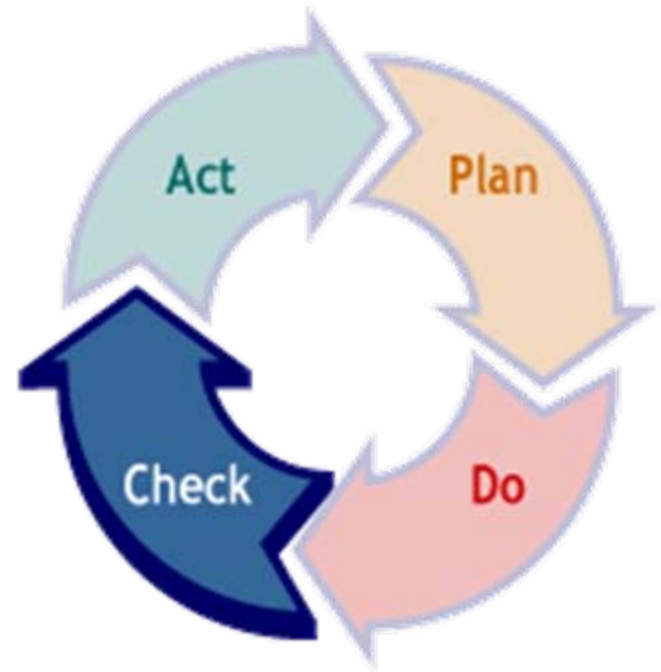
# Structure of ISO 14001



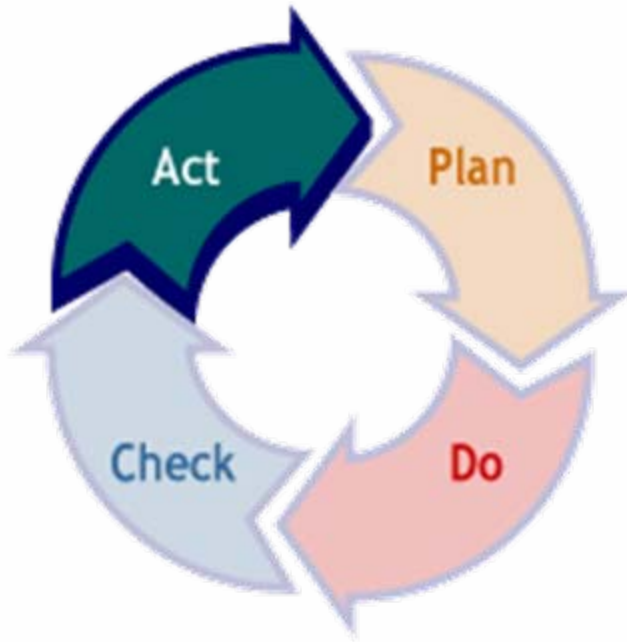
- Do – Implement the processes

# Structure of ISO 14001

- Check – Monitor and measure processes against environmental policy, objectives, targets, legal and other requirements, and report the results

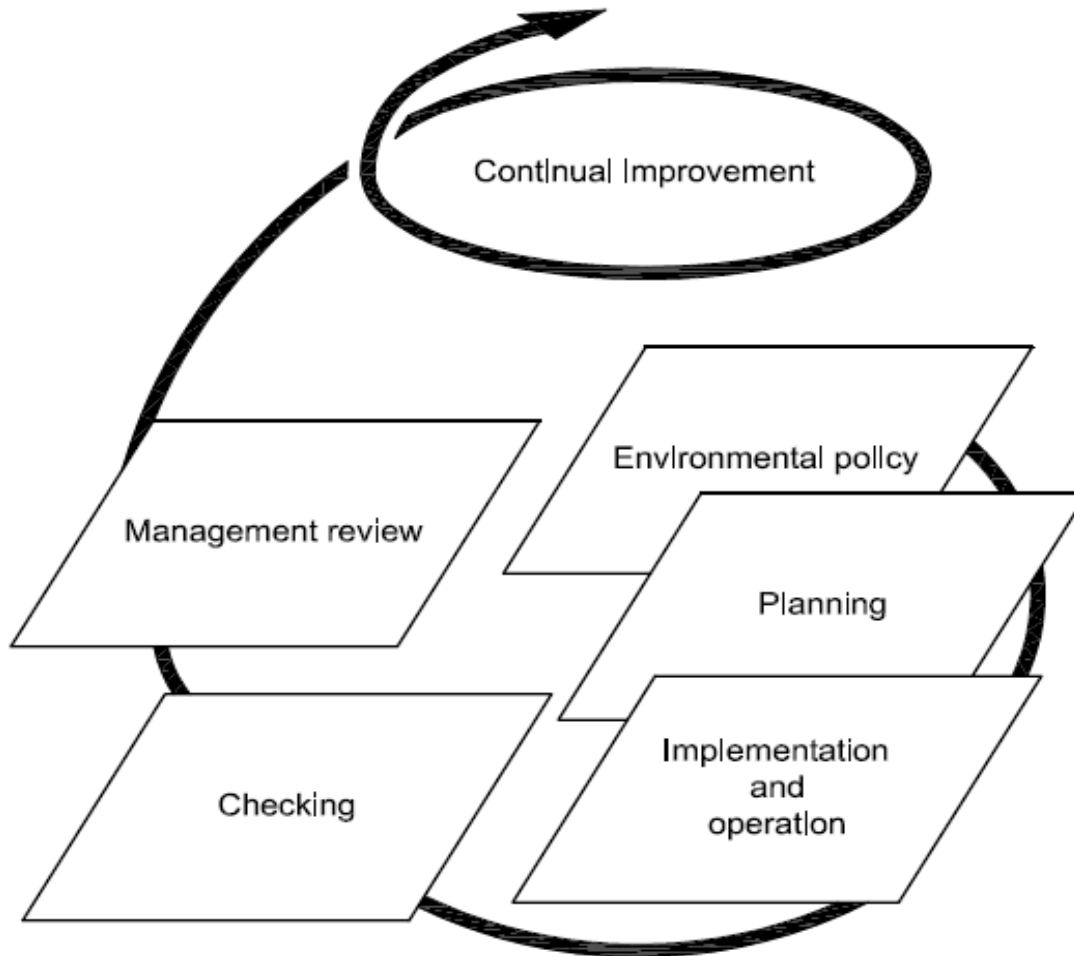


# Structure of ISO 14001



- Act – Take actions to continually improve performance of the environmental management systems

# Structure of ISO 14001



- The official EMS model shows the approach that the plan should take. A company has to first come up with their environmental policy, implement it, perform checks to ensure that it is effective, review the results, and strive for continual improvement.

# Structure of ISO 14001

## Paragraph 4.5.1 Operational Control - Monitoring and Measurement

Question	Documents reviewed	Findings
Procedures exist and are documented to regularly <b>monitor</b> and measure the key characteristics of operations having a significant impact on the environment.		
This includes recording information to <b>track performance</b> , relevant operations controls, and conformance with objectives and targets.		
Monitoring equipment is <b>calibrated</b> and maintained and records of the process retained.		
A procedure exists for periodically evaluating <b>compliance</b> with legislation and regulations.		

The audit of this element was performed by:  
Date:

Notes:

ISO-14001  
Implementation Task  
# 16

ISO-14001 Element: 4.5.4  
Environmental Audits

### 4.5.4. Environmental Audits (overview)

The standard requires the organization to establish and maintain a periodic E.M.S. audit program to determine that the organization's Environmental Management System conforms to ISO 14001.

ISO-14001, ISO-9000, QS-9000 and other standards offer methods for conducting audits.

If you currently perform audits of other management systems, then follow your organizations policies and procedures, using the "checklist" included.

You will need to review each paragraph of the standard to ensure that what you have implemented is performing to your expectations and supports the requirements of ISO-14001.

Form EMS-F-05.002 Internal Audit checklist covers each paragraph, with questions that will offer evidence that your E.M.S. is fully implemented and functional or not.

The enclosed audit checklist is a starting point and should be modified to fit the implemented Environmental Management Systems your organization has implemented.

Record what documents were audited and any findings, record non-conformance on the Corrective Action request form (EMS-F-04.05.004) and the over all results of the audit on the Internal Environmental audit summary report (EMS-F-04.05.011)

You will need to select your auditing team, those with experience in auditing other standards and/or experience with E.M.S. standards are the most likely candidates.

Record this information below:

Name of auditor	Experience



# Structure of ISO 14001

- The First Section of ISO 14001 is the: ***Scope of EMS***
  - The scope includes the requirements for an Environmental Management System and guidance for its use. It “specifies requirements for an environmental management system to enable an organization to develop and implement a policy and objectives which take into account legal requirements and other requirements to which the organization subscribes, and information about significant environmental aspects. It applies to those environmental aspects that the organization identifies as those which it can control and those which it can influence. It does not itself state specified environmental performance criteria



# Structure of ISO 14001

- The standard is meant for any organization that wants to achieve the following:
  - establish, implement, maintain and improve an environmental management system
  - assure itself of conformity with its stated environmental policy
  - demonstrate conformity with this International standard by
    - making a self-determination and self declaration, or
    - seeking confirmation of its conformance by parties having an interest in the organization, such as customers, or
    - seeking confirmation of its self-declaration by a party external to the organization, or
    - seeking certification / registration of its environmental management system by an external organization



# Structure of ISO 14001

- The Second Section of ISO 14001 is: ***Normative References***
  - None are cited



# Structure of ISO 14001

- The Third Section of ISO 14001 is: ***Terms and Definitions***
  - The definitions cover such terms as who an *auditor* is, what constitutes *continual improvement*, how an *environmental objective* is outlined.
  - There are twenty (20) definitions covered in this section.



# Structure of ISO 14001

- The Fourth Section of ISO 14001 is: ***Environmental Management System Requirements***
  - 4.1 General Requirements: the general overview of the process
  - 4.2 Environmental Policy: requires an organization to define its environmental policy and seek out the groups commitment to it
  - 4.3 Planning: identifies the major steps in the process and how to go about achieving them
  - 4.4 Implementation and Operation: outlines the processes for instituting EMS, including resources, training, communication, documentation, operational control, and emergency preparedness and response
  - 4.5 Checking: identifies how an organization monitors their EMS and corrects any problems
  - 4.6 Management Review: top level management must review the processes periodically and make any necessary changes



## Structure of ISO 14001

- ***Annex A*** is the Guidance on the use of this International Standard.
  - This is a supplement to Section 4 of the standard. It goes into greater depth about requirements, implementation, and legal aspects.

# Structure of ISO 14001

- **Annex B** explores the relationship between ISO 14001:2004 and ISO 9001:2000

**Table B.1 — Correspondence between ISO 14001:2004 and ISO 9001:2000**

ISO 14001:2004		ISO 9001:2000	
Environmental management system requirements (title only)	4	4	Quality management system (title only)
General requirements	4.1	4.1	General requirements
Environmental policy	4.2	5.1 5.3 8.5.1	Management commitment Quality policy Continual improvement
Planning (title only)	4.3	5.4	Planning (title only)
Environmental aspects	4.3.1	5.2 7.2.1 7.2.2	Customer focus Determination of requirements related to the product Review of requirements related to the product
Legal and other requirements	4.3.2	5.2 7.2.1	Customer focus Determination of requirements related to the product
Objectives, targets and programme(s)	4.3.3	5.4.1 5.4.2 8.5.1	Quality objectives Quality management system planning Continual improvement



# Relationship to Other Standards

- ISO 14001 is not dependent on other standards
- It can be used in conjunction with ISO 9001 - Quality Management Systems as shown above
- It can also be used with ISO 14004, which is the Environmental Management Systems - General guidelines on principles, systems and support techniques.
- ISO 14001 contains requirements for registration and certification while ISO 14004 provides guidance on implementing an EMS and how it coordinates with other management systems.

# Relationship to Other Standards

**Table A.1 — Examples of activities, products and services and their associated environmental aspects and impacts**

Activity/Product/Service	Aspects	Actual and potential impacts
<b>Activity: Road construction</b>		
Mechanical compaction	Emission of particulate matter to air (dust)	Pollution of air
Construction during heavy rain <sup>a</sup>	Discharge of soil and gravel to land and water	Additional depletion of non-renewable natural resources (replacement of gravel-small stones) Degradation of localized land Erosion of soil Pollution of water Degradation of wetland habitat



## Value of ISO 14001

- When first introduced in 1996, companies were weary but realized “that they cannot afford to be as far behind in environmental standards as we were in ISO 9000” (Lucas and Roberts 34).
- By early 1997, American industries were beginning to back ISO 14001 because they realized that the standard could improve environmental world trade.
- By early 1998 only 60 US firms had obtained registration compared to 1600 firms worldwide.



# Value of ISO 14001

- By 2001, “At least 36,765 ISO 14000 environmental management certificates had been awarded in 112 countries”
- That increase was due to
  - the value that companies began to see in being certified
  - they noted that their clients were appreciative of the concern for environmental standards and that it was not only good to have a plan but also great public relations.
- There was also pressure between industries to use EMSs
  - “Corporate giants like GM, Toyota, Ford and others are using their significant market influence to spurn companies who offer their services to the giants, but neglect to implement EMSs”



## Value of ISO 14001

- There are downsides to using ISO 14001
  - If a company decides to develop an Environmental Management System, they need to investigate the legal ramifications of first just developing the system
  - And secondly of making sure the system is not poorly implemented



# Value of ISO 14001

- There are several reasons that I personally see for the Value of this Standard
  - As a consumer, I would like to know that the companies that I am spending my money with are concerned about the environment and their role in protecting it.
  - Having a checklist and continually going back through it is a great idea. An organization cannot simply have a plan and never ask the question of whether or not it is working.
  - It is important to have the EMS certified independently through the National Accreditation Program. Although some companies are still self certifying, having an outside audit can help to see where there are failures in the plan from someone not involved in creating it

# Use of ISO 14001 in Governmental Regulations

- There is no government regulation in place for this standard. The Environmental Protection Agency has made it clear that it has “no intention of mandating the use of EMS in rules and or permits”
- In the latest EPA Position Statement on Environmental Management Systems published in December of 2005, the EPA declares that “EMSs do not replace the need for regulatory and enforcement programs, but they can complement them”





# Use of ISO 14001 in Governmental Regulations

- In April 2000, Presidential Executive Order 13148 – The Greening of Government through Leadership in Environmental Management was published.
  - This order required certain parts of EMS to be implemented for federal agencies. They were required to conduct environmental audits every three years and were expected to reduce toxic waste release and implement pollution prevention procedures.



# Use of ISO 14001 in Governmental Regulations

- In Oregon, legislature was introduced to issue green permits to organizations that have implemented EMSs.
  - “The Oregon program is a voluntary incentive-based program to reward facilities that go beyond compliance and achieve superior environmental performance. The Green permits contain language that encourages regulatory flexibility, such as consolidated reporting and other reporting modifications, extended permit intervals, expedited permit approval and some enforcement discretion”



# Use of ISO 14001 in Governmental Regulations

- The chart below shows some of the savings that several cities are starting to recognize, not just financial, but in waste reduction as well:

<b>PUBLIC ENTITY</b>			
City of San Diego Refuse Disposal Division	Tri-Metropolitan Transportation District, Portland, Oregon	Massachusetts Department of Protection	Jefferson County, Alabama
<b>SAVINGS</b>			
\$868,000	\$300,000	18,000 pounds waste in 3 months	Millions of dollars saved
<b>DESCRIPTION</b>			
in heavy equipment and diesel rates by shutting off equipment during breaks and lunch periods	identified as operational savings - \$66,000 of this for energy conservation	due to recycling program at DEP's W.E.S. Laboratory	due to potential bond rating improvement



# Conclusion

- In summary, ISO 14001 – Environmental Management Standards are completely voluntary. As a nation, we are coming to realize that we are depleting our resources at an exponential rate and need to take measures to prevent this from occurring. We expect the companies and services that we use to take this matter seriously and ensure that they are working to protect all of us. An organization is under no pressure from the government to use this standard. However pressure from an organization's clients may dictate the adherence to the guidelines presented in ISO 14001.