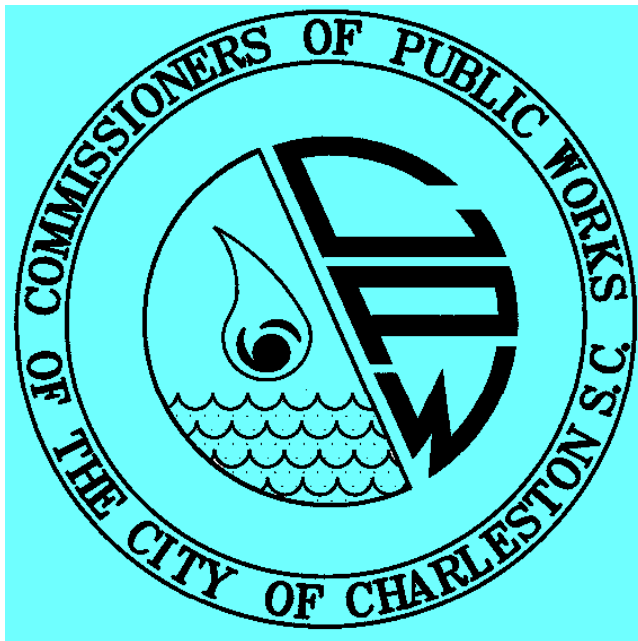
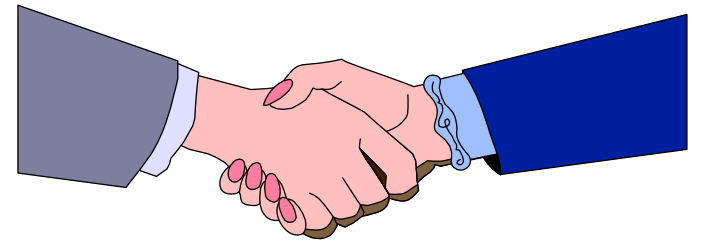


Charleston Commissioners of Public Works ~~ISO 14001 Management~~ Perspective



WHAT IS ISO 14000?

- A series of standards (world wide) that establishes environmental management system (EMS) requirements and guidelines
- ISO 14001 is the only standard that contains requirements that will be audited for registration purpose through independent third party audit.



The ISO 14001 Model

- Five guiding principles
 - Commitment and Policy
 - Planning
 - Implementation
 - Measurement & Evaluation
 - Review and Continual Improvement



Powerful Business System

- The process will lead to establishment of a structured framework to:
 - Evaluate your current practices and procedures
 - Determine if current operating processes are effective
 - Identify potential weaknesses and liabilities
 - Assist in the implementation of environmentally sound improvement plans
 - Assist your organization in developing long-term environmental strategies

ISO 14001

Tailor Made for Utilities

- Compatible with current utility operations and functions
- Consistent with WEF and AWWA programs (or others I.e., Partnership for Safe Water)
- Excellent regulatory interface

CPW and ISO 14001:

- Problems faced:
 - aging infrastructure
 - more stringent environmental laws and regulations
 - customer interests
 - limited resource base (human and financial)
 - private sector competition

Implementing the Standard

- June 1998, CPW began the implementation process
- Visited other certified firms
- Acquired understanding of level of effort
- Identified cost to CPW
- Sought information on selecting a Registrar

Implementing the Standard Con't

- Information received convinced CPW to implement ISO 14001
- CPW views the establishment of an EMS as a process that forces us to better organize priorities and identify problems to limit liabilities

Aspects and Impacts, Resources & P2

- CPW has established a planning process for identification of environmental aspects and evaluation of potential impacts
- CPW has developed a structured process for allocating resources
- CPW has developed a structured process to implement waste minimization and pollution prevention measures into our business operation

Measuring Environmental Performance

- CPW has developed a process to measure and evaluate performance against established objectives and targets
- CPW has established a management review process to monitor environmental performance and environmental improvement

Keys to Effective Implementation

- Management Commitment
 - ISO 14001 cannot succeed without the full support and backing of top-level management
 - Commitment can be difficult to obtain where there is lack of understanding of the standard and the benefits

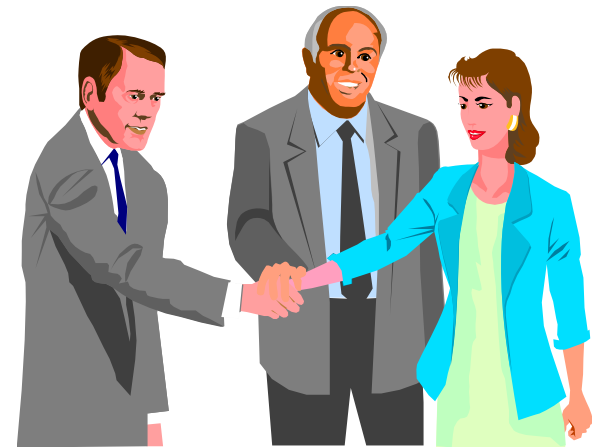
Gaining Management Commitment

Visit other certified organizations. Get first hand knowledge of their experiences and benefits

- Arrange a presentation for your top management.
- Consider a consultant with experience in implementing ISO 14001

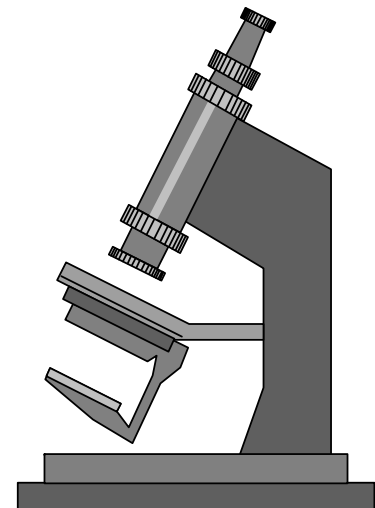
More Keys to Implementation

- Contact your state agency for assistance on ISO 14001.
- Contact the “Multi State EMS Work Group” for assistance.



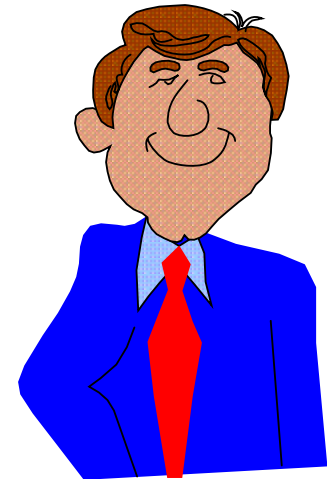
Perform a Gap Analysis

- Implementation of ISO 14001 can be difficult without a baseline measurement
- Will provide information on your organization's strengths and weaknesses
- Will assist you in determining the level of effort required



Select a Management Representative

- ISO 14001 requirement
 - this person should receive specialized training on the ISO 14001 standard
 - the ISO 14001 Lead Auditor Course is excellent for the specialized training



Management Representative

- Typically heads the EMS internal audit program
- Advises top management during management reviews
- Allow the Management Representative the opportunity to visit other certified sites



Establish EMS Steering Committee

- The steering committee is essential for development and implementation of the EMS policy and procedures and assembling the various working teams
- The EMS steering committee members also should have specialized training and knowledge
- The responsibilities and authorities of this committee need to be defined and supported by management.

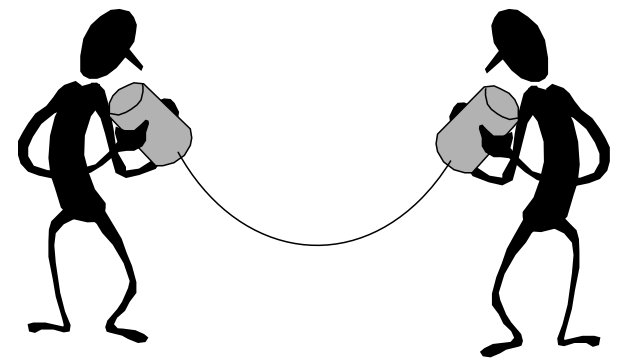


Inform the Workforce

- Successful implementation of ISO 14001 requires informed employees
- Training on ISO 14001 should begin immediately upon the decision to implement
- Involve employees in all phases of the ISO 14001 work effort. Their ownership will assure success of the EMS

Select a Pilot Group or Department

- Many utilities have multiple departments or functions. By selecting a pilot department to implement the EMS valuable time and effort can be saved.



Selection of a Registrar

- **The Registrar is an independent third party and will audit and certify your EMS to ISO 14001.**
- **Select a Registrar that meets your needs and understands your business**



Registrar Selection Factors

- Is the Registrar accredited by the RAB?
- Are they experienced in your business operation?
- Are they geographically convenient to you?
- What are the Registrar's costs for the contract period?

ISO 14001 a Voluntary Standard

- ISO 14001 does not require registration
- An Organization Can:
 - Implement the system and self-declare
 - Obtain certification through third party audit.

Factors on Self Declaration

- Will self declaration be credible with your customers and/or interested parties
- Are you eligible for regulatory relief or incentives without registration (several states have EMS incentive legislation)
- Will you lose the potential for reduced rates from lenders and insurers

Benefits to CPW


- Better strategic and environmental planning
- Reduced liability and improved reliability
- Reduced operating and maintenance costs
- Improved regulatory compliance
- Positive utility image and enhanced customer trust



More Benefits

- Aspects identification has greatly improved employee awareness and involvement
- Skill-based knowledge of the staff has substantially increased
- Operational deficiencies have been identified

Significant Environmental Aspects

 COMMISSIONERS OF PUBLIC WORKS Of the City of Charleston South Carolina		Significant Environmental Aspects Control Method Table Hanahan Water Treatment Plant		
		Corresponding Requirements: CPW EMS - 4.3.1 - Environmental Aspects and Significant Impacts ISO 14000, Sub-clause 4.3.1 - Environmental Aspects	Revision: 3 Revision Date: 11/30/99 Effective Date: January 22, 1999	Prepared By: Approved By: Signature:
Purpose: To further evaluate the Significant Environmental Aspects and provide Control Methods for monitoring, reducing and/or correcting the Significant Impacts. Scope: The Control Method(s) were evaluated using CPW EMS Policy No. 4.3.1, Regulatory Requirements, and the Committee's training, experience and knowledge.				
Rank	Significant Aspect Item	Significant Aspect Details	Significant Impacts	Control Method
1	Pumping Systems	Prevent water supply shortage Natural resource consumption	Public water supply Natural resource depletion	SCADA System Standard Operating Instructions
2	Water Quality	Ensure public safety Ensure conformance w/ legal requirements	Public Water Supply Regulatory Compliance	Operator Certification Program (LLR) Daily and Monthly Operating Reports Standard Operating Instructions Laboratory Sampling
3	Equipment/Facility Integrity	Prevent service interruption Protect treatment process integrity	Water quality Environmental contamination	CMMS System SCADA System
4	Emergency Preparedness	Prevent service interruption Prevent hazardous chemical release	Public safety Environmental contamination	Emergency Preparedness Plan Risk Management Plan Hazwoper Certification Training SPCC Plan
5	Monitoring/Testing	Protect treatment process integrity Ensure conformance w/ legal requirements Ensure public safety	Water quality Public safety	SCADA System Standard Operating Instructions CMMS System Daily and Monthly Operating Reports Laboratory Sampling
6	Water Supply Protection	Protect treatment process integrity Protect natural resources	Water quality Resource conservation	Aquatic Weed Management (DNR) Laboratory Sampling
7	Chemical Systems	Protect treatment process integrity Prevent hazardous chemical release	Water quality Environmental contamination	SCADA System Standard Operating Instructions NSF Document Chemical Specifications
8	Hazardous Chemical Management	Prevent hazardous chemical release	Public safety Environmental contamination	Process Safety Management Plan Risk Management Plan SPCC Plan Hazwoper Certification Training SCADA System Scrubber System Emergency Preparedness Plan Conditional Major Air Permit Monitoring

Examples of Achievements

- CPW departments have implemented 88 objectives and targets with associated improvement plans for the year 2000.

Achievements

- Wastewater Collection Department targeted a 5 % reduction in fuel costs achieved a 23 % reduction in 1999.
- Fleet Services improvement plans has resulted in 100 % recycling of tires, scrap metals, batteries and used oils and a 95 % reduction in antifreeze wastes

Costs

- Records Management costs were reduced 10% for 1999
- Operating costs at the water plant reduced \$175,000 by using only necessary equipment

Conclusions

- ISO 14001 has provided CPW with a framework for improvement
- CPW's exposure to regulatory liabilities and environmental risks has been reduced
- Operating and Maintenance Costs are being reduced
- Registration has provided impartial evidence to our customers of our environmental commitment