

25th ANNUAL NATIONAL CONFERENCE ON MANAGING ENVIRONMENTAL QUALITY SYSTEMS

APRIL 24-27, 2006

Marriott Renaissance, Austin, Texas

Technical Papers

Quality Improvement and International Quality Standards

- C.Hedin, Effective Management Review for Improving ISO9000 and E4 Quality Management - 8:30 AM
- M.Sullivan, Information Compliance with ISO 14000 - 9:30 AM

TECHNICAL SESSION:
Quality Improvement and International Quality Standards

C. Hedin's technical paper entitled "Effective Management Review for Improving ISO9000 and E4 Quality Management" is not available.

INFORMATION COMPLIANCE WITH ISO 14000, THE ENVIRONMENTAL ISO

Mary Thomas Sullivan

Basics

The International Organization for Standardization (ISO) was formed to standardize the manufacturing processes. Just as ISO 9000 focuses on quality management, ISO 14000 focuses on environmental management. As a series of international standards on environmental management, ISO 14000 provides a framework for the development of environmental management and supporting audit systems.

ISO 14001 provides the framework for environmental compliance. ISO 14010, 14011, and 14012 provided specific guidance on auditing. These ISOs have been replaced by ISO 19011.

ISO 14013/5 provides audit program review and assessment material. ISO 14020 handles labeling issues. ISO 14030 provides guidance on performance targets and monitoring within an Environmental Management System. ISO 14040 covers the life cycle issues. ISO 14001 is the most known ISO as it is the only ISO 14000 standard against which an organization can be currently certified by an external certification authority.

In 1992 an announcement was made concerning the emergence of two new environmental ISOs. ISO 14063 is concerned with environmental communication guidelines and examples. This ISO will help companies link to their external stakeholders to keep them informed. ISO/TC 207 has responded to the challenge of climate change by agreeing to work on standards dedicated to measuring reporting and verification of entity and project level greenhouse gas emissions. These standards were written to ensure information was being communicated to the public.

Compliance with other Regulations

Environmental regulations do not stand alone. They often find a relationship with finance and other business regulations. The Sarbanes-Oxley Act of 2002 requires corporations to deliver financial and other records, at the request of the Securities and Exchange Commission or other agencies, or face liability for non-compliance. This act could have an effect on risk management. It could have a “domino” effect on document management resulting from poor ethics and the hiding of requested information. ISO 15489, *Information and Documentation – Records Management*, Clause 4, states that an organization should integrate records management into the business systems and processes. This procedure is crucial in meeting goals through best practice in managing

information assets. ISO 15489 provides guidance and methodology for managing all records, in all formats and media, for the entire life cycle of those records and information. This document provides a global quality benchmark for records management practices.

Benefits

Information compliance with ISO 14000 includes the maximization of the investment in technology by digitizing records. The digitizing of records provides for storage and timely retrieval. Information compliance with ISO 14000 involves the collection and holistic analysis of environmental information from a quality assurance standpoint. Various elements of the gathered data are integrated into the program as a whole to determine the effects of detrimental issues, such as pollution, from a global, national, regional and individual level. Geographic Information Systems analyze data to aid scientists and planners in making decisions that will be local in impact but will become national, as well as global, with consequences and benefits. By using environmental information and information technology, government agencies can focus on achieving outcomes and spend less time mandating a process. Focusing on purpose and outcomes helps government solve environmental issues in a timely and effective manner.

The ISO 14000 family provides management tools allowing organizations to control their environment and enjoy economic benefits. Examples of these benefits are:

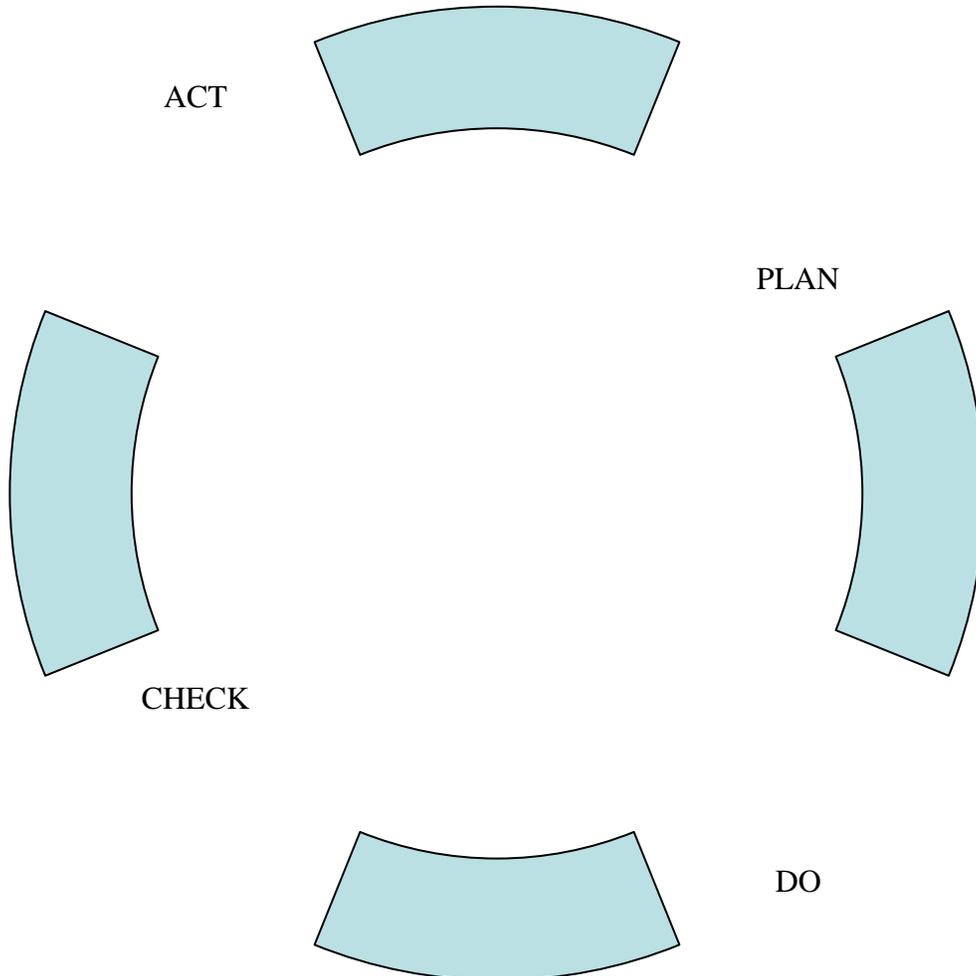
- ❖ Reduced use of raw material / resources
- ❖ Reduced energy consumption
- ❖ Improved process efficiency
- ❖ Reduced waste generation and disposal costs
- ❖ Utilization of recoverable resources

Examples of reduced waste and utilization of recoverable resources would be the work of collection agencies that create landfills for refuse and, when full, turn the landfill into parks or housing developments. Environmental information allows everyone to become good stewards of the land.

ISO 14000 and Quality Assurance

Information surrounds us. Environmental information professionals see a need for regulatory compliance. They also see a need for and relationship with quality assurance. The Life Cycle of Information is very similar to the Life Cycle of Quality. If these life cycles lined up in a column similar parts of each life cycle would be evident. W. Edwards Deming and Joseph M. Juran reference the PDCA Cycle. This cycle is

sometimes referred to as the Deming wheel. The PDCA Cycle is useful when collecting environmental information for regulatory compliance.



The Plan stage would consist of deciding what information is needed in order to be in compliance with regulations. The Do stage would consist of gathering this information so that compliance may be documented. The Check stage would consist of verification and resolution of any conflicts within the documentation. The Act stage would consist of presenting the gathered information if it is requested in an audit of regulatory compliance. These four stages back up the quality admonition of Say what you Do and Do what you Say.

Savings

Information compliance provides continuous savings in cost and in time. Gathering, storing and retrieving information in a timely manner allows both the agency and the user to devote time toward priority issues. Organizations implementing ISO 14001 can expect to improve their environmental performance. This strategy will result in an improved Return on Investment (ROI). ISO 14001 certified companies will require others to obtain the same certification in order to do business. When ISO 9000 certified companies in Europe required the same certification from companies in other countries a lot of complaining was heard. Today ISO 9000 certification is an accepted practice among manufacturers. Better products are produced and offered to the consumer resulting in a rise in sales. As more companies become certified in the parts of ISO 14000 relevant to their work, the environmental message will be communicated and expected as a condition of trade, resulting in a cleaner community, country and world. Environmental information should be shared wherever and whenever possible to keep the user informed.

Information Retrieval

Inter-relationships between our actions and the impact of these actions on the environment, as well as the environment's impacts on us, are complex. The use of technology, such as GIS, can help explain these relationships and explain the environmental issues. GIS also allows the user to explore theoretical possibilities of environmental issues. The use of technology in information retrieval allows agencies to share information with stakeholders and improve the flow of communication.

ISO 14031 provides guidance for an organization to evaluate its environmental performance. This information can be used as a basis for internal and external reporting. Communication on the environmental aspects of a product or service will influence environmental improvement. Truthful and accurate information provides a basis for consumers to use when making a buying decision. ISO 14020 addresses labels and declarations so that truthful statements are made concerning the product's relationship to the environment. Advertisements that advocate "Don't be a Litterbug" do not appear to influence some individuals as evidenced by trash on the road. An advertisement that states why litter hurts the environment might have more impact.

System Security

Environmental agencies collect large amounts of data. This is data that can be costly to gather, quality control, analyze and use. Real-time monitoring can drive environmental performance at regulated facilities. An example of real-time is the Texas Commission on Environmental Quality (TCEQ). The data this agency collects allow the TCEQ to inquire into the progress of pollution prevention and better health. TCEQ monitors suspect sections of waterways to determine data exhibiting pollution. Environmental

performance measures can help justify charging program fees. The protection of such data should be of utmost importance.

The security of the organization's information is every employee's responsibility. Security is really applying common sense. A plan for protection should be composed and tested. Security codes must be simple yet effective. A password should not be so simple as to allow a person access by guessing the code. An organization should perform a "friendly attack" to see if intruders could gain unauthorized access to the building. Another "friendly attack" would be to see if a user without a lot of computer knowledge could "hack" into a program. Individuals should remember that all "hackers" are not amateurs but may present a façade of amateurs. If either of these tests fails, the organization has time to make repairs to the procedures and test again to ensure protection from those individuals who do not need access to the organization's information.

Along with the preparing of a plan for protection would be the identification of the organization's vital records. Vital records are documents an organization needs to be back into business as soon as possible following a disaster.

Business Continuity

Effective environmental protection depends on the collection and management of environmental information. Geographic Information Systems (GIS) can be an effective means in informing and improving environmental protection.

The Vital Records Plan should include provision of continuity of operations following a disaster. Many steps go into this plan and provisions for services should be listed in a manual long before a disaster occurs. Services to be contacted will include the Fire Department, Police Department, Water Removal Services, and a local meat packing company for freezer space, among numerous others. Your point of contact at these facilities should be visited when the manual is first prepared and should be informed of changes on a regular basis so that your company's name will stand out if it is affected by a disaster. This manual needs to be updated annually. Copies of the manual must be on file with all first responders and must be updated when the organization's copies are updated.

Remote Access

The Michigan Department of Environmental Quality (DEQ) employs electronic submission of Discharge Monitoring Reports (DMRs). These reports include information on water pollutant discharges as required by the National Pollutant Discharge Elimination System (NPDES) in the Clean Water Act. The data entry burden has been reduced,

facility reporting and data quality have been improved, and the gathered information is available for program decisions as well as the improvement of the management of permits.

Templates for permits with prescribed language are part of the system. Inclusion of these templates allows permit writers to modify permits increasing consistency and efficiency. Using this standardized format on the web allows agencies to exchange data and track shipments. These information exchanges are used to solve business problems for environmental agencies.

Knowledge Sharing

Knowledge is an organization's most valuable asset. Knowledge is compiled of information built on experience. Knowledge sharing among employees assists in the improvement of the use of information technology equipment. Managing these resources produces data that will be compiled and released to the requestor.

Answering requests for information is another form of environmental information management. This process represents customer service and goodwill through the cooperation between the agency and the requestor. Information compliance based on the environmental ISO 14000 family builds awareness and trust for the public.