

Environmental Data Management, LLC

An Approach For Improvement Of An Existing Environmental Information Management System

This report describes a scope of work which has been successfully employed by Environmental Data Management, LLC to investigate and strengthen Environmental Information Management Systems (EIMSs) for clients in regulated industry.

Environmental Information Management Systems - Overview

The purpose of an EIMS is to facilitate and incorporate all of the processes, software and hardware that supports effective planning, communication, decision-making, reporting, record keeping, and assessment within an Environmental Management System (EMS).

As a brief example, the EIMS may include among other things an internet and intranet interface; high powered data base capability; ready accessibility to reports, studies, and key regulatory references through a library function; environmental planning information; monitoring data with appropriate segmentation of raw data, data in the process of QA/QC, and final data; training program information including such things as on - line training programs and training records; copies of all regulatory submittals, agreements and compliance information with a system to effectively track commitments; a contact manager feature which includes names, addresses, phone numbers, e-mail addresses, etc. for internal and external environmental stakeholders; links to regulatory resources on the web or other resources; and other elements of a complete EIMS.

An EIMS is more than computer based tools, although tools are important. The EIMS should ensure that environmental decisions made throughout the company are 1) consistent, 2) fully address all requirements and commitments, 2) are based on sound science and engineering data and analysis, and 3) are fully reflective of the policies of top management.

Approach To EIMS Improvements

A typical EIMS improvement project incorporates work in three primary phases. The first phase involves the identification and refinement of both client and stakeholder needs. The identification of stakeholder needs is a critical factor in determining what is required from the system. The project deliverable for Phase I is a list of consensus-driven long-term environmental data management criteria for the client. The second phase is the review of the client's current EIMS to identify any gaps that may exist. The final phase

is to fill the gaps by designing and implementing necessary changes to the EIMS, including but not limited to, the development of a comprehensive EIMS that effectively incorporates all data management needs.

Scope Of Work

Task I - Define EIMS Program Information Needs

The best foundation for a comprehensive EIMS is the creation of an in-depth inventory of performance requirements or needs drawn from three categories of information stakeholders, 1) client, 2) regulatory agencies, and 3) private stakeholders.

A Client's EIMS performance needs should address:

1. Environmental Performance - The EIMS should measure change in client's environmental performance. The system should gather, analyze and report results so that client can compare results with applicable regulatory requirements, permit conditions and corporate environmental goals.
2. Compliance - The EIMS should have the potential to improve the client's compliance with regulatory requirements. Data should be collected, analyzed and reported such that compliance actions are documented relative to identified problems and as a result, the client can measure change in regulatory compliance status.
3. Pollution Prevention - The EIMS should show the client's pollution prevention improvements by tracking measures taken which meet pollution prevention goals.
4. Financial Cost/Benefits - The EIMS should track the financial costs associated with environmental compliance activities, pollution prevention initiatives, and corporate initiatives for increased environmental performance. Costs should be reported relative to quantitative or qualitative benefits so as to allow better financial decision-making.
5. Inspection Reporting - The EIMS should be able to accommodate agency data requests and routine compliance reporting.

The EIMS should serve the information needs of both the client's plant level management team and staff in addition to the needs of the corporate organization. Accordingly, the consultant should coordinate and document a series of meetings with the client's plant management team and staff to be identified in consultation with the client. These meetings should comprehensively document environmental information needs. These needs may include various reports to the Board, financial cost benefit reports, compliance program status reports, coordination with purchasing activities to ensure acquisition of environmentally preferred products, reports necessary for day to day compliance decision making by operations, and any other required reports or data access.

Regulatory Stakeholder Needs

The consultant should review the client's existing EIMS documents to acquire a comprehensive list of environmental regulatory compliance requirements. Additionally,

the consultant should scan existing Federal, State and local laws, regulations, and enforcement trends to identify areas of regulatory applicability. The EIMS should enhance client's ability to respond to regulatory requests for required information and inspections by utilizing electronic data management techniques. To that end, in consultation with client management and legal counsel, the consultant should coordinate and document a dialogue between client, regulatory agency stakeholders, and technical members of the consultant's team to determine:

- opportunities for electronic data reporting and related agency requirements so that the client meets regulatory requirements more effectively while avoiding undue risk of legal exposure,
- identify technical system requirements regarding agency access and retrieval of required compliance data,
- define a process for real time interactions between the agencies and client and their legal counsel when necessary to ensure complete communications on routine and non-routine electronic filings, and
- utilizing the consultant's experience with enforcement matters involving clients in Arizona the consultant should identify critical enforcement trends on an industry and region specific basis.

Private Stakeholder Needs

Many clients have interactions with numerous private stakeholders on environmental matters. For those clients, the consultant should assist the client in identifying appropriate stakeholders and their needs relative to the client's EIMS. The client's interactions with these groups can be more effectively facilitated by innovative data management strategies incorporated into client's EIMS.

Summary Report

The project team, in an iterative process with client, should prepare a report summarizing the client's EIMS performance requirements for use in Task II. This report should prioritize and summarize system needs from the perspective of regulatory compliance requirements, regulatory stakeholder needs, client management and staff needs, and private stakeholder needs. Additionally, consultant should, in consultation with client, assess and prioritize the data management implications of the needs identified in Task I for use as a baseline comparison during Task II.

Task II - Environmental Management System (EIMS) Analysis

The consultant should work with the client in a comprehensive review of the client's current policies, procedures and related regulatory enforcement trends; then assess the client's environmental management program status from the corporate level through the front line compliance activities. Additionally, the consultant should use the results of Task I to identify and prioritize potential enhancements to the client's current EIMS and data management practices and capabilities.

The data access and report requirements can be fulfilled in a variety of ways including utilization of a company Intranet, the World Wide Web, company E-mail and other communications systems. All of these approaches require appropriate attention to system security and access requirements.

Conclusions and Recommendations Report

The outcome of Task II should be the preparation of a written report documenting client's final decisions on what client's EIMS and related data systems needs to provide in terms of system performance and results. These decisions should be based on client's currently expressed EIMS criteria and stakeholder needs identified in Task I. The report should compare existing system capabilities to system performance and results needs. The selection of any additional electronic information management or communications vehicles will be completed in Task III.

Task III - EIMS System Design

Using the reports developed in Tasks I and II, the consultant should work with client to prepare a detailed EIMS system design. The system design should be in the form of a detailed report, which should include:

- a final list of system criteria developed from the client criteria listed in the description of Task I activities,
- using the list of information needs gathered in Task I, an outline of specific data endpoints such as data access, analyses and reports that meet the system needs,
- a flow chart describing data collection, storage, analysis, and data endpoints,
- software requirements that incorporate consideration of existing programs in use or under development, "off the shelf" software packages and approaches that may require new software development,
- hardware requirements that incorporates consideration of existing client equipment,
- staffing requirements related to the EIMS including increases or decreases in staff and revisions to job descriptions,
- initial and ongoing training requirements,
- an internal and external communications plan,
- system startup requirements (data conversion and loading, linkages to existing programs, etc.),
- a plan and schedule for implementation including both a short and long term strategy, and
- a projected budget for each element of the system design.

Task IV - EIMS Installation, Start Up, and Troubleshooting

The consultant should assist the client in implementing the tasks approved by the client in Task III for final selection of system components, purchasing where necessary, installation, start up, initial operation and troubleshooting to ensure the complete and effective implementation of the EIMS. This task should be scoped and priced as the work proceeds in Task III. It is anticipated that aspects of Task IV should begin in parallel to aspects of Task III in order to complete work on urgently needed portions of the EIMS as quickly as possible.

Individual work assignments should be divided in a joint effort between client, consultant and others who may be needed at this stage i.e. code writers, software and hardware representatives, etc.

Task V - EIMS Maintenance and Continuous Improvement

The consultant should provide ongoing assistance in managing the system, troubleshooting problems and assisting in the management of change.

Project Staffing

The development of a comprehensive EIMS requires a joint effort between the client's representatives (Plant, Corporate and IT Support) and a multi disciplinary consultant team that possesses the following characteristics:

- clear understanding of client's goals and objectives in environmental performance;
- senior level experience in the development of state of the art utility EIMS strategies and techniques;
- the maturity and self confidence to work effectively with other consultants in a team approach;
- demonstrated results oriented experience in the electronic integration of EIMS elements;
- an external focus that utilizes the best techniques available worldwide
- a focus on ensuring that electronic data systems are designed to serve the process of better decision making and better outcomes rather than creating an endpoint in themselves;
- demonstrated competence in providing best in class strategic guidance to utility clients regarding the effects of industry restructuring so that EIMSs are flexible and can meet future needs;
- positive and productive relationships with local environmental regulatory agencies and other stakeholders so that system needs can be accurately identified and addressed,

- an extremely competent and reliable understanding of applicable Federal, Arizona State and local regulations and enforcement trends; and finally
- a commitment to the development of an environmental information management system (EIMS) that meets system requirements effectively, economically and on time in terms of the client's short and long-term needs.

For More Information Please Contact

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