Implementing Environmental Management Systems in the Federal Government: Real Change or Flavor-of-the-Month?

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Managing environmental conditions in federal facilities poses major challenges throughout the United States government. According to the Environmental Protection Agency, there are 12,153 regulated federal facilities nationwide. The increasing age of federal facilities along with decreasing agency budgets for equipment repair and replacement, and the shifting of dwindling resources into more politically attractive areas are increasingly problematic. However, the private sector's approach in applying management system principles to environmental issues has shown that they can be very effective. This organized approach of management system principles, also known as environmental management systems (EMS), can lead to more efficient and effective environmental management in federal facilities. For the federal government, EMSs are now the preferred means of managing facility environmental conditions. However, EMS implementation cannot be accomplished overnight. It takes commitment from all levels within federal agencies to implement EMSs since EMSs must be incorporated into day-to-day facility activities and operations.

The U.S. Environmental Protection Agency (EPA) estimates that there are 12,153 regulated federal facilities nationwide (U.S. Environmental Protection Agency [EPA], 2004). Federal facilities are involved in such diverse operations as airports, construction, fish and wildlife management, hospitals, laboratories, industrial-scale operations, materials storage and shipment, military and naval operations, public lands management, and vehicle fleet management. Depending upon their missions, federal agencies, just like their private sector counterparts, are required to comply with all federal, state, tribal and local environmental requirements and are not immune to enforcement actions. They are subject to fines and penalties by the EPA, state and local regulatory agencies for violations of environmental requirements (EPA, 1999, p. xv). Also, in those cases where federal agencies have facilities located overseas such as the Department of Defense (DOD), they are subject to the host nation's environmental requirements as well (U.S. Department of Defense, 1996, p. 2).

Managing the Environment at Federal Facilities

Managing the environmental conditions in federal facilities poses major challenges throughout the federal government due to the increasing age of

federal facilities along with decreasing agency budgets for equipment repair and replacement, and the shifting of dwindling resources into more politically attractive areas (University of North Carolina at Chapel Hill, Dept. of Public Policy [UNC], 2003, p. 247). Also, many federal facilities are managed well, while others are poorly managed.

In calendar year 2001, 283 federal facilities reported that they were responsible for 79 million pounds of total releases in the Toxic Release Inventory under the Emergency Planning and Community Right-to-Know Act (EPA, 2004, p. 44). Such releases by federal facilities do impact the environment and call for a more organized approach to address environmental issues. This organized approach of management system principles is called an environmental management system. The Project Final Report of the National Database on Environmental Management Systems defines an environmental management system (EMS) as "a formal set of policies and procedures that define how an organization will manage its potential impacts on the natural environment and on the health and welfare of the people who depend on it" (UNC, 2003, p. 5). The Office of the Federal Environmental Executive (2004) defines an EMS as a "formal set of management processes and practices that enables an organization to manage and reduce its environmental impacts and operate with greater efficiency and control." According to Coglianese and Nash (2001), "EMS's set forth internal rules, create organizational structures, and direct resources that managers use to routinize behavior in order to help satisfy their organizations' environmental goals" (p. 2).

Although Executive Order No. 13148, "Greening the Government through Leadership in Environmental Management" (2000), clearly states that the objective is to implement EMSs in all appropriate federal facilities, an EMS is not restricted as such. There are EMSs developed along federal agency-wide and geographical areas as well. There were 2,418 appropriate facilities reported by EPA in the *Calendar Year 2003 Scorecard for EMS Implementation in the Federal Government* (n.d.), and more than 200 of these facilities were actively implementing EMSs. It is estimated that by the end of 2005, many more federal facilities will have EMS's implemented (Office of the Federal Environmental Executive, 2004, p. 2).

What is an EMS?

Simply put, an EMS is a structure that enables an organization to systematically reduce its environmental "footprint" in its day-to-day activities. Much like personnel or financial management systems, an EMS incorporates systemic thinking and provides a framework to identify and ensure compliance with regulatory requirements, and to provide

opportunities for continuous environmental improvement. An EMS provides another approach to overall environmental management that replaces the prescriptive command and control paradigm.

The International Standards Organization (ISO) is the world's largest developer of voluntary consensus standards and the ISO 14001 standard is the most recognized EMS framework. The ISO 14001 standard formally defines EMS as "the overall management system that includes organizational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining the environmental policy" (International Standards Organization, 2004). According to the ISO 14001 standard, all EMSs must be documented and rigorous in reviewing existing environmental programs and management systems. They must incorporate continuous management review on improving performance. Such system implementation reflects accepted quality management principles based on the model of "Plan, Do, Check, Act," using a standard process to identify goals, implement them, determine progress, and make improvements to ensure continual improvement (Office of the Federal Environmental Executive, 2004, p. 3).

EMSs can help to avert potential problems such as inadequate environmental staff, lack of training, lack of environmental targets and goals, and communication and feedback problems. With a strong EMS in place, many potential environmental problems can generally be avoided and can further enhance the effectiveness of an environmental program. Furthermore, an effective EMS integrates environmental management into everyday business activities and supports an organization's mission. According to Coglianese and Nash (2001), "managers can use EMS's to achieve important benefits in terms of environmental performance and cost reduction" (p. 225).

EMS Drivers and Roadblocks for Federal Agencies

Issues facing most federal agencies in the environmental area include but are not limited to: land and resource management, impacts from site operations, policy implications, compliance concerns, budgetary pressures coupled with the demands for enhanced efficiency, and public perception. These representative environmental issues along with the ever-present demand for government efficiency and effectiveness tap at the need for a master approach for agencies to address their environmental complexities. EMS offers one such approach. However, like all policy issues there are both drivers and roadblocks relating to EMSs.

Drivers

Drivers for EMS include but are not limited to the overall need to improve environmental performance because of an obligation by the government toward environmental stewardship, public expectations, the "business side" of government or the efficiency piece, and regulatory actions. More specific regulatory drivers include Executive Order No. 13148 that requires that EMS is implemented in all appropriate facilities by December 2005. Furthermore, the executive order requires that each appropriate federal facility will identify its unique environmental impacts, establish objectives and targets to reduce or eliminate those impacts, and organize a process for achieving those goals.

Executive Order No. 13148 requires that federal agencies enhance performance in environmental management, environmental compliance, public right-to-know, and it sets goals for federal facilities on pollution prevention, improved landscaping initiatives, and use of EMSs. The management systems approach is consistent with the Administration's management agenda, with its goal of environmental stewardship. Also, the Office of Management and Budget requires line item planning for EMS implementation, as well as financial accountability for program management.

Specific operational benefits include better awareness of impacts, allowing the workforce to make more informed decisions, increased suggestions and initiatives, additional opportunities to recognize and reward performance, more consistency in operations, faster response and more effective corrective action when problems do occur, and delegates responsibility to more people, and to where it is better addressed.

Roadblocks

Roadblocks for EMS implementation by federal agencies include the following: (1) frequent changes in leadership, (2) changing priorities over time, (3) political and other organizational pressures, (4) budget cuts resulting in decreased allocations for environmental programs, (5) lack of management support, (6) motivating employees, and (7) finding relevant metrics to measure EMS goals (UNC, 2003, p.259). Furthermore, there is still some lingering concern that EMS implementation could be interpreted by some as simply a "flavor-of-the-month" initiative.

Enforcement Actions by EPA and States against Federal Facilities

The EPA and the states performed 1,228 inspections of federal facilities in fiscal year (FY) 2002 and 1,397 inspections in FY 2001 (EPA, 2004, p. 2). Both EPA and the states performed 293 enforcement actions in FY 2001 and 279 enforcement actions in FY 2002 against federal facilities. According to

this same report, enforcement actions under the Resource Conservation and Recovery Act remained the most common, representing 63% of all enforcement actions at federal facilities in FY 2001 and 56% of all enforcement actions in FY 2002.

Approximately 19% of enforcement actions in FY 2001 and 15% in FY 2002 were issued under the Clean Water Act/National Pollution Discharge Elimination System. Enforcement actions under the Clean Air Act accounted for approximately 16% of the total enforcement actions in FY 2001 and 26% in FY 2002. Enforcement actions under the Safe Water Drinking Act/ Public Water System Supervision were less than 3% of total enforcement actions in both FY 2001 and FY 2002 (EPA, 2004, p. 2).

With environmental compliance, two approaches must be looked at simultaneously—the environmental implications of operations, on the one end, and the operations implications on the environment, on the other end. An EMS helps to integrate both of these approaches.

EMS Measurement as a Management Tool

An EMS also directs and facilitates relevant measurements. Measurements include environmental conditions, status of programs and compliance, and the EMS itself. Some examples of EMS metrics developed to measure benefits include the following (U.S. Department of Energy, 1998, pp. 17-21):

- Improves the environmental condition (environmental indicators).
- Facilitates meeting your mission (how often environmental issues interfere with your mission).
- Minimizes accidents and problems (incidents, losses).
- Reduces redundant paperwork (time spent per task).
- More efficient use of resources (investment per unit activity).
- Facilitates compliance with requirements (number of non-compliances, penalty costs, missed Executive Order deadlines).
- Responds to public scrutiny trends (complaints, communications).

It must be remembered that an EMS is a process. It is not the performance goal. For example, EMSs and pollution prevention are not the same thing. An EMS is the process while pollution prevention is the performance goal. Another example is energy conservation, where energy conservation is the performance goal, while an EMS is the method used to get to that goal.

Examples of Some EMS Models

The Code of Environmental Management Principles for Federal Agencies

In response to Executive Order No. 12856, "Federal Compliance with Right-to-Know Laws and Pollution Prevention," signed in 1993, the EPA, through an interagency task force, developed in 1995 the Code of Environmental Management Principles for Federal Agencies (CEMP) (EPA, 1997). The EPA believes that many federal agencies have programs in place that address the principles of CEMP, but those programs may not be seen as connected parts of a system and may be operated in isolation from each other. The common elements in CEMP are listed in the *Implementation Guide for the Code of Environmental Management Principals* (EPA , 1997, p. 1).

CEMP aims to move agencies beyond compliance and the traditional short-term focus on regulatory requirements to a broader, more inclusive view of the interrelated nature of environmental activities. It is modeled on common elements found in a number of EMS standards but with a stronger emphasis on regulatory compliance and sustainable development, that is, the judicious use of resources to ensure their continued availability.

CEMP facilitates the identification of federal agency weaknesses in managing resources for prevention, rather that for response. Proper implementation is achieved through ongoing review of environmental programs and commitment to continuous improvement. Proper implementation of CEMP should facilitate integration of programs already in place.

ISO 14001 EMS Standard

Although the International Standards Organization (ISO) standards are voluntary consensus standards, they are nonetheless market sector driven and created. Governments may participate in the development of a standard but it is not issued as a legislative or regulatory standard. ISO standards are process standards, not performance-based standards, and are reviewed for revision every five years. The ISO 14001 EMS standard was finalized and issued in 1996, and its basic structure is shown in the *Environmental Management Systems: Managers Guide* (Office of the Federal Environmental Executive, 2004, p. 4).

ISO 14001 was revised in 2004 to emphasize compliance with legal and other requirements. "Environmental aspects" and "environmental impacts" are terms unique to the ISO 14001 standard. According to this standard, an environmental aspect is defined as "elements of an organization's activities, products or services which can interact with the environment." The best way to remember this is to think of environmental aspect as a "cause;" for example, wastewater discharges. An environmental impact is defined by the

standards as "any change to the environment, whether adverse or beneficial, wholly or partly resulting from an organization's activities, products, or services." Think of an environmental impact as an "effect," for example, degradation of water quality (Sasseville, Wilson, Lawson, 1997, pp. 89-101).

The most important thing, however, is to focus on managing the environmental aspects (cause). For example, you want to manage the wastewater discharge (environmental aspect) in order to prevent the degradation of water supply (environmental impact). The focus should be to manage environmental aspects and prevent any damage to the environment before it occurs. Every attempt should be made to identify all environmental aspects. Managing environmental impacts, however, is secondary because the damage to the environment has already occurred, according to Sasseville, Wilson, and Lawson (1997).

The standard requires the determination of "significant aspects" which are determined by the organization based upon its unique situation. Considerations should be given to things such as likelihood of occurrence; severity, frequency, duration; boundaries; normal, unique, and emergency situations; and stakeholder concerns. Useful guidelines for determining significant aspects include identifying legal requirements that apply to a facility's activities including organizational policies and facility initiatives or voluntary practices.

The principal federal facilities receiving ISO certification are those engaged in laboratory or industrial type operations. However, other kinds of federal facilities may seek such certification such as the San Antonio Missions National Historical Park in San Antonio, Texas (San Antonio missions receive ISO certification, 2003). The policy implications of EMS for the federal government and for the larger public sector are interesting and will be examined further in the next section.

E.O. 13148 Interagency Environmental Leadership Workgroup

Executive Order No. 13148 called for the establishment of an Interagency Environmental Leadership Workgroup to develop policies and guidance required by the executive order. The EPA chairs the Workgroup, more than 18 federal agencies have formal representatives to the Workgroup and responsibilities are shared. Several Workgroup efforts—such as EMS implementation, budget issues review, priority chemical selection, and an analysis of general training needs—were led by various member agencies.

The Workgroup developed guidance for each fiscal year's annual report on

progress toward the goals of the executive order and has developed documents that are used across the federal government including an EMS background primer and a budget document explaining how the goals of the executive order should be included in the budget process. Information about the Workgroup may be found at: http://permanent.access.gpo.gov/websites/epagov/www.epa.gov/fedsite/eo13148workgroup.html.

The Federal Acquisition Regulation

A final rule amending the Federal Acquisition Regulation to implement Executive Order No. 13148 was issued jointly by the U.S. Department of Defense, U.S. General Services Administration, and the National Aeronautics and Space Administration on July 24, 2003 (Federal acquisition regulation for U.S. Department of Defense, General Services Administration, and the National Aeronautics and Space Administration , 2003). The final rule provided a means for federal agencies to obtain contractor information for the implementation of EMSs and the completion of facility environmental audits at federal facilities. The agencies would determine which facilities and operations are appropriate for EMS implementation. For example, federal facility operations may include government-owned, contractor-operated facilities and government-owned facilities on which multiple contractors perform services. Therefore, contractors would have to meet the requirements for EMSs and facility environmental audits if the work is performed at an appropriate federal facility designated by the agency.

Policy Considerations

Our discussion so far leads to an important and fundamental concept—the interconnection of people with their environment. Early in the last century what seemed to be an inexhaustible supply of natural resources was realized toward the later part of the century to be, in fact, finite. The tension between market forces and governmental constraints in the form of regulations has always been a delicate balance especially for environmental policies, which have frequently shifted. For example, if strict regulations were imposed and production impaired, the result would probably a loss of jobs in various sectors. However, if regulatory constraints were totally removed, the result could be that resources diminish or in some cases vanished altogether resulting in harm to the environment (Daly & Farley, 2004, pp. 373-387).

A study by the University of North Carolina suggests "EMS adoption and success are influenced both by external pressures—including regulatory expectations in particular and by the resources and internal capacity

available to the facility to do so. Government polices enter into both these considerations" (UNC, 2003, ES-26). EMSs can assist federal facilities in understanding their place in the environment since they provide for responsibility, ownership, and accountability of actions and related impacts. Furthermore, EMSs are results oriented.

EMSs are designed to identify the root causes of poor environmental performance and initiate corrective and preventive action. This helps to minimize the "bandage" syndrome, where the fixes are simply superficial and that so often times occur in federal facilities. There is a "compliance management system" embedded within the broader "environmental management system." First, the theme of compliance is seen throughout the Plan-Do-Check-Act elements. Second, there are specific compliance-related requirements in an EMS (such as periodic compliance audits) that help address compliance issues before they occur.

The University of North Carolina study also notes that "the existing research literature suggests that EMS adoption and implementation presents a series of important and interesting questions for research, both about business decision-making for environmental management and about the efficacy and appropriateness of public polices seeking to influence that behavior" (UNC, 2003, p. 2). This is the dilemma faced in the private sector. However, for federal facilities there is an added dimension as described in the study:

Government agencies are constrained by legislated limitations on their options, and budgetary constraints on their resources, from pursuing environmental goals and management options beyond their statutory authority. (p. 247)

Meeting the challenge of EMS implementation at federal facilities is quite complex. When faced with repairing damaged caused by recent hurricanes, fire, and other natural disasters, federal facilities often have to make difficult choices and many times they do not have the ability to shift designated funding. The shifting of resources to other areas remains increasingly problematic for federal facilities and does not help them towards their EMS implementation. Perhaps, one solution might be to extend the EMS implementation date of December 31, 2005, as specified by Executive Order No. 13148. This would allow for additional flexibility for federal facilities to successfully implement their EMS programs.

Conclusion

In the end, what matters most is that the best elements of environmental performance are performed and that facility level EMSs are implemented

throughout federal agencies (UNC, 2003, p. 26). Overall, federal agencies are making considerable progress in EMS implementation with the broad goals of integrating environmental considerations into day-to-day planning and decision-making. For example, EMS implementation is working reasonably well for large federal agencies (such as the Department of Defense and the Department of Energy) that have industrial or commercial research type of activities and operations. These federal agencies tend to be better funded. There still remains challenging work, however, especially for the civilian federal agencies (e.g., Department of Agriculture, Department of Transportation, Department of Veterans Affairs) that are faced with severe resource and funding constraints.

However, real change is occurring with EMS implementation by federal agencies at the facility level occurring throughout the public sector. The notion that EMS implementation by federal agencies is merely a flavor-of the-month initiative can finally be put to rest.

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