

Public Sector Value of an ISO 14000 Certified Environmental Management System: The Fort Lewis Army Installation in Washington State

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ISO 14000 is a set of international standards that offers a systematic approach to environmental management. One of the standards, ISO 14001, establishes the specifications for an environmental management system using five categories of core elements: environmental policy; planning; implementation and operation; checking and corrective action; and management review. The standard requires organizations to have well-documented procedures and/or systems, but is results-oriented rather than prescriptive. The overall goal is to create conditions of continual process improvement in environmental protection and pollution prevention.

Although the International Organization for Standardization (ISO) developed its 14000 standards primarily for private industry, its goal applies to the public sector as well. The Department of Defense is evaluating ISO 14001 for potential applicability as the framework for establishing environmental management system standards within the Department. Under the direction of the Department of Defense, a 2-year ISO 14001 Pilot Study was conducted during calendar years 1998 and 1999. Fort Lewis, a Department of Army installation in western Washington State, participated as one of several Army Pilot Sites. The Pilot Study at Fort Lewis was conducted within Public Works, with the Environmental and Natural Resources Division leading the effort.

The Fort Lewis Military Reservation includes: 75,000+ acres of native forests, prairies, streams, lakes, and wetlands; 1000+ species of flora and fauna; and 10,000 acres of developed land, including 5000 buildings and 700 miles of roads. It employs 19,000 soldiers and 3500 civilians, with a combined payroll of \$1 billion. Approximately 260 engineers, architects and craftsmen operate in Public Works, which manages and maintains all the buildings, utilities, roads, lands and other real property of the installation, and is responsible for the environmental management program.

Environmental management at Fort Lewis has been based on a multi-media approach, which is implemented using many techniques, including: the teamwork among program managers and other Fort Lewis activities; the internal operating permit program (a summary of permitted activities and how they interact with the environment); the Fort Lewis environmental protection regulation; the pollution prevention program (reworking processes with new equipment to reduce material use and waste generation); and the environmental coordination map (designed to show trainers where they can and cannot train on the installation to ensure that environmentally sensitive habitats are protected). The four main objectives of the environmental program are: (a) to maintain 100% continuous compliance; (b) to simplify environmental requirements; (c) to minimize training impacts/enhance training environments; and (d) to provide good stewardship of natural resources.

Maintaining 100% continuous compliance with environmental laws and regulations is a must in order to protect our command, the mission, and the environment. Wherever possible, the tasks of the average worker/soldier are simplified, while the more complicated aspects of compliance

are assumed by the professional environmental staff. Minimizing training impacts and enhancing training environments speaks to the need to balance the mission of the military with its landowner responsibilities. For example, Fort Lewis has to balance the need for training exercises with the issues of endangered species and habitats. Finally, providing good stewardship requires integration of environmental ethics into the daily lives of workers and soldiers.

Fort Lewis had been exploring a move toward ISO 14001 environmental management prior to acceptance in the pilot study. The trend toward contracting out public sector services under Commercial Activities made it readily apparent that the organization must find a competitive edge in order to survive in the near future. As directed by congress, Department of Defense civilian organizations at installations across the country are bidding against private industry for the right to perform base operations. Competition has occurred at multiple installations including Aberdeen Proving Grounds, Maryland and Fort Riley, Kansas, just to name two. Some of these functions have remained government-run, but at others, private industry has won the bid and displaced the public sector employees. These considerations and other benefits expected from an environmental management system motivated Public Works to fully implement ISO 14001 and to pursue certification by an accredited third-party ISO 14000 registrar.

A gap analysis was performed in February, 1999, comparing the existing environmental management system with the requirements in ISO 14001. The gap analysis revealed that the system's weakest areas were in implementation and operation, checking and corrective action, and management review. Until that point, efforts had focused almost exclusively on the environmental

policy and planning. Progress in the other areas of the standard improved dramatically as a result of the gap analysis. A pre-assessment audit by the registrar was scheduled in May 2000, with the certification audit scheduled for August 2000. Having a date to shoot for provided focus and gave an urgency to the task that would not have been present otherwise. In September 2000, Fort Lewis became the first Army Installation to have attained ISO 14000 certification, and the third within the Department of Defense, after the Navy's North Island Naval Air Station in San Diego, certified in May 1999, and the Naval Undersea Warfare Center at Newport, RI, certified in June 2000.

Benefits—Expected and Unexpected

Originally, it was expected that an ISO 14001 environmental management system would improve the organization's environmental planning. The ISO system does help in the prioritization of environmental work, but the Army system for accomplishing this function already works quite well, so improvement was measured in millimeters, not kilometers.

Another expected benefit of a switch to an ISO 14000-certified environmental management system was increased support for environmental programs and projects at higher management levels in the organization. ISO 14001's systematic means of identifying priorities would provide strong backup data for the projects and programs, and would help environmental projects compete for limited resources. Examples include the Public Works initiatives to reduce the use of paper in the organization, and funding for training of maintenance workers regarding how to better protect historic properties during the accomplishment of the jobs.

Of all the perceived advantages going into the ISO 14001 transformation, the only one that exceeded its expectations was integration of environmental stewardship into the jobs of all employees. Reduced pollution to the environment, as well as reduced liability and increased productivity, have resulted from this integration. Prior to ISO

14001 implementation, most employees felt removed from the environment and could not see the connection between their actions and impact on the environment. The development of Standard Operating Procedures which include environmental requirements should result in environmental considerations no longer being perceived as a burden added to the task at hand, but rather as an integral part of that task. For instance, checking the airflow across the filters of a paint booth to ensure proper operation becomes an integrated part of the painting operation, not an extra step imposed by the environmental protection folks. Boiler plant operators now follow standard procedures that ensure the boilers are kept within the proper operating ranges so they don't pollute excessively. As employees begin to take personal ownership of the impact their jobs can have on the environment, they begin to fully realize their strength under the system. In Public Works, we continue to realize these benefits as more and more employees have their eyes opened to the power they have to make a change.

Another benefit is improved regulatory relations, but not in the direct way many perceive. One cannot expect regulatory agencies to be less strict on an organization simply because the organization has an ISO 14000-certified environmental management system. The benefit is realized in the way the system prevents violations in the first place. As we implemented ISO 14001 at Fort Lewis Public Works, we actually saw an initial increase in regulatory actions such as Notices of Violation. This is because the implementation of the system uncovered hidden noncompliance situations. For instance, the incinerator had been operated for months at temperatures far below the minimum prescribed in its Air Operating Permit. Investigation found that the thermocouple used to measure the operating temperature was not properly calibrated and that two of the four gas jets used to heat the incineration chamber were not functioning at all. Environmental requirements were not always being properly identified, and many key personnel in the organization were often uninformed of the

requirements, setting the stage for potential, inadvertent violations of environmental regulations. Once exposed, these sorts of situations were corrected, and the ISO 14001 environmental management system will help prevent future occurrences. It is this preventive posture and quick corrective action that improve relationships with regulators.

An unexpected benefit of the ISO 14001 implementation process was the necessary identification, overhaul, and upgrade of existing, ingrained, undocumented systems and procedures that were inefficient or hopelessly flawed. In some cases, documents were so poorly controlled that multiple, undated versions of the same document floated around the organization causing confusion. Records were often haphazardly thrown in boxes and kept in a corner of the room. There would be an unused, official work management system, and then the real, unofficial way things actually got done. Vast knowledge on the best work techniques is often stored only in the heads of the most experienced workers. Once the older, experienced workers retire and move on, the wisdom and institutional knowledge is lost because it has not been written down in the standard procedures.

Change to such traditional systems sometimes meets with great resistance. It is true that the energy required to establish the new system is high, and ISO 14001's highly structured and documented nature does look, on the surface, to be very bureaucratic. However, the argument against implementing is like that of a man moving a pile of sand with a pair of tweezers saying he does not have time to stop and go get a shovel. An ISO 14001 environmental management system helps prevent such inefficiencies by relying more on the system and less on the personalities that operate the system. Eventually, as more employees start abandoning tweezers for shovels, productivity increases and pollution decreases.

Lastly, several benefits come with independent third party certification. ISO 14001 allows for self-certification, and there is the option of using only selected parts of the standard. We were tempted to do this, but

instead made a management decision to go for full third-party certification. Certification provided us with a team goal. Its rigorous "peer review" is incredibly valuable in trying to ensure that our environmental management system meets the standard it is intended to meet. Third party certification was also thought to be the best option for assisting our competitiveness under Commercial Activities, as this tough standard would also be required of other potential bidders.

Lessons and Conclusions

At Fort Lewis, ISO 14001 is being implemented within Public Works, not installation-wide. Regarding the scope of implementation, one should remember that what is really occurring is a culture change. People are being asked to abandon what has worked (with varying results) for them in the past and to embrace something new; something where the initial impression is that it will cause them to have to do more work for less output, masking the true productivity-enhancing benefits. As such, it will be very hard to convert a large organization all at once. It may be wiser to select a section, division, or unit that is representative of the organization as a whole, and concentrate your efforts there. Once the culture shift has occurred and the system is working, it can be spread (often by the "new" converts) to other parts of the organization. It is also important, however, to select a large enough part of the organization. If we had attempted implementation throughout the installation, rather than just within Public Works, we would have been unable to overcome the inertia. Conversely, implementing only within Public Works' Environmental and Natural Resources Division would have drastically reduced the observed benefits, as this smaller group of professionals was already working well with one another. Reducing the scope does reduce the impact toward environmental enhancement, as processes

such as vehicle maintenance, troop training, and recreational programs that are not a part of the Public Works mission are not evaluated for their impacts on the environment. However, success within public works has stirred interest among the other organizations, particularly the Directorate of Logistics, and implementation within other organizations on the installation is expected in the near future.

Of utmost importance to the decision about scope is the presence of support from the top. Implementation will not occur without strong, active, top-down support. One should go no higher in the organization than where this support begins to weaken. Again, demonstrated ISO 14001 success at a selected level within an organization can be used to convince higher management of the value of broader implementation. Bottom-up support is also extremely helpful. In the nooks and crannies of the organization are personnel who see the value of the system early on. Use them to help spread enthusiasm among their peers.

There is no doubt that we underestimated the effort required to bring about the new environmental management system, but we also drastically underestimated its benefits. Of course, when you envision the ISO 14001 implementation project, you're going to assume a very orderly march to completion. In reality, a new management system is one the greatest upheavals you can put an organization through, but as a result, the benefits are longer-lasting. The system is designed around providing incentives for continual improvement, so it will continue to bear fruit and make the organization better: better at what it does, and better at protecting the environment.

ISO 14001 in the Public Sector

The typical argument against implementing ISO 14001 environmental management systems in the public sector goes like this:

Since the economic value of ISO 14000 certification is the opportunity to compete for business in markets in which certification is required, and public sector organizations do not have to compete in those markets, an ISO 14001 environmental management system is a drain on a public sector organization's resources that provides no economic benefit. The fallacy of this argument is in the belief that stewardship of the environment, even stewardship beyond regulatory compliance, is costly to the organization. It doesn't have to be.

The beauty of an ISO 14001 environmental management system is that it drives continual improvement in the overall workings of the organization. A big piece of environmental stewardship is the reduction of waste and raw material usage. Any organization that can systematically reduce waste production and material usage is going to be more efficient. Private companies have an obligation to their shareholders to make money. As a public sector organization, we at Fort Lewis have an even greater responsibility to use our taxpayers' dollars wisely, and look out for their interests in all areas, including the quality of the planet upon which they live. An ISO 14001 environmental management system provides the same benefits for a public sector organization that it does for a private one. As the trend to compete and contract out public sector functions continues, ISO 14001 can be used to establish the market environment for these competitions whereby, regardless of who wins the bids, protection of the environment is assured.

An early version of this paper was presented in June 2000 at the NAEP Conference in Portland, Maine. Address correspondence to: Paul T. Steucke Jr., Chief, Environmental and Natural Resources Division, Public Works, AFZH-PWE MS-17, US Army, Fort Lewis, WA 98433-9500; (fax) 253-964-2488; (e-mail) steuckep@lewis.army.mil.