

Applying Safety Management Concepts to Address Environmental Problems

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Introduction

In this age of streamlining business processes, people are asked to work in more areas than ever before. This is true in both the public and private sectors, and the safety field is not immune. More and more safety professionals are being asked to address questions about the environment issues, and they are expected to know the answers to continue advancing. Also, the “customers” that these professionals serve often see the fields as one in the same. This natural overlap has been recognized by organizations that were traditionally involved primarily with safety and health issues. The American Society for Safety Engineers now has an active Environmental Practice Specialty. Also, divisions within the National Safety Council address environmental issues, for instance, the Business and Industry Environmental Affairs Standing committee developed the 2004 Environmental Regulations Resource Guide.

As someone who faced this challenge years ago, the author shares insights from his own evolution into how to make this transition, including strategies to quickly learn the basics of environmental issues. Also, he explores ways to adapt the strategies used to address safety issues so they can be applied to environmental problems.

Common Scenario

A common scenario that occurs in organizations is that someone will start out as a safety professional. Eventually, however, due to reorganization, downsizing, and normal attrition, the safety professional finds him/herself answering questions related to environmental issues. Oftentimes, this evolution happens formally and people are reassigned into a different role or acquire a different title. Other times, it is just assumed that the fields are so interrelated that the person will naturally be a good environmental fit.

When this happens, the safety professional can react in one of four ways: Accept the new duties enthusiastically; accept the new duties begrudgingly; avoid the new duties; and actively resist. While it is natural to avoid change, it can also limit the professional’s future opportunities and perception of value. So whichever strategy a safety professional chooses, it is important to understand the potential upside to such opportunities is that the professional can grow and become even more valuable to an organization.

Similarities Between Environmental and Safety Issues

One of the keys to removing anxiety about change is to understand the similarities that exist with the current situation. There are numerous similarities between approaches to addressing safety and environmental problems. First, it is important to note that the basics of both environmental and safety issues are memorialized in the Code of Federal Regulations (CFR), and a proper reading of regulations is essential for appropriate implementation. The safety professional already has a strong background identifying, reading, and understanding regulations, and this is a critical skill for environmental compliance. The safety professional already understands that it is important not only to read regulations, but to read them in context, and seek additional resources such as interpretation letters.

Once the basics are covered, the safety professional further understands continuous improvement and the importance going beyond compliance. Programs are in place at both OSHA and EPA to provide compliance assistance and set targets for programs that are higher than mere regulations, such as the Occupational Safety and Health Administration's Voluntary Protection Program (VPP). Similarly, there are several partnership programs at the Environmental Protection Agency that are a tremendous resource for the safety and/or environmental professional. And both OSHA and EPA have active enforcement offices with information on violations that they find.

Although reporting requirements vary, the approaches for establishing safety and environmental programs are similar. Clear expectations need to be codified in policies, and programs need to be established and supported to safeguard against noncompliance, identify problems when they do occur, rectify them, investigate them, and take action to reduce repeated incidents. Robust safety and environmental programs contain many of the same elements and may work hand-in-hand to complement each other. In fact, many organizations find it beneficial to establish one overarching safety and environmental management system to address all such issues.

Finally, there are numerous areas of natural overlap in the environmental and safety fields. For instance, when a hazardous material is released, it can often have consequences that affect both the workers at the site, and the environment beyond the fence line. Minimizing the use and generation of hazardous materials consistent with pollution prevention requirements in environmental regulations has tremendous safety benefits as well. This overlap is also reflected in various legislation. The Clean Air Act Amendments of 1990 include both the Process Safety Management (PSM) standard 29 CFR 1910.119, which is an OSHA regulation, and the Risk Management Plan (RMP) requirements in 40 CFR 68, an EPA program. In fact, the original text of the amendments states that the Secretary of Labor shall promulgate the PSM standard in coordination with the Administrator of the EPA. Although there is a consequence analysis portion of RMP that requires an assessment of the offsite consequences, a significant portion of RMP includes the same elements as PSM. Hazardous releases can impact the decision to recommend a shelter-in-place for near neighbors offsite; a recommendation often coming from the safety and emergency response departments, but one geared toward public safety. Also, OSHA regulations such as Hazardous Waste Operations and Emergency Response address the cleanup of environmental releases and reference various EPA standards.

Differences between Environmental and Safety Issues

While there are many similarities between environmental and safety issues as noted above, it is important to realize that there are differences that the professional should consider. One obvious point is that while occupational safety problems are largely governed by OSHA, environmental issues are largely addressed by EPA standards. The EPA has a more dynamic approach to rulemaking, spending many times what OSHA does on an annual basis to produce and enforce rules, and producing more rules in the process. This means that the safety professional has to be even more diligent in his/her quest to stay abreast of changes in environmental regulations. Also, a major aspect of safety has always been traditional occupational hazards, as opposed to process safety involving releases of hazardous materials. Environmental regulations are focused on problems that can either extend beyond the fence line of your facility or cause damage to the environment at your facility, such as soil contamination.

While perhaps not necessarily characterized as conflicts, there are situations where safety and environmental professionals view circumstances differently. For instance, during a fire involving a toxic or flammable material, incident commanders generally prioritize rescue and situation control, which in some instances may mean evacuating spent firewater in the most expeditious manner possible. However, environmental considerations would include taking precautions to ensure that spent firewater does not enter any public waterways. Venting material outside of an enclosed space may be beneficial for the workers inside, but it may also set up an environmental issue with those outside. Also, OSHA and EPA maintain lists for various regulations such as PSM and RMP. While the lists share many chemicals, there are occasionally differences in materials and threshold quantities that trigger compliance with regulations. As an example, the threshold quantity of chlorine for OSHA PSM is 1,500 pounds, but it is 2,500 pounds for RMP, reflecting the assumption that it takes a higher amount of material to have an offsite consequence.

Applying Safety Knowledge to Environmental Issues

Learning the basics

Faced with the similarities and the differences, how does the safety professional start applying his/her knowledge in the environmental arena? The first step is to learn the basics of environmental regulations. As a broad overview, understand that environmental regulations basically cover pollution in air, water, and soil, and include the characterization and disposal of hazardous waste. Further, they address the use, transportation, disposal, and cleanup of hazardous materials. Environmental regulations, like safety regulations, build on previous requirements, so it is imperative to understand the fundamental requirements as context for new ones. Any organization must comply with environmental regulations if it has the potential to discharge pollutants into the air, soil, or waterways, or generates, transports, stores, treats, or disposes of waste.

Several good sources exist for learning about basic environmental issues, including the EPA website at www.epa.gov, *Environmentor* (the newsletter of the Environmental Practice Specialty of the American Society of Safety Engineers), and *Basic Concepts in Environmental Management* by Mackenthun. The following, while not a comprehensive list of environmental regulations or a thorough analysis of those regulations that are noted, provides some highlights and starting points for the safety professional to conduct introductory research.

Water - Regulations related to water include the Safe Drinking Water Act of 1974, which set standards for contaminate levels in protected water sources. The Clean Water Act of 1977 expanded previous requirements and further regulated the discharge of pollution into navigable waterways. It set up a system of water quality standards and included a discharge permitting program referred to as the National Pollutant Discharge Elimination System, or NPDES.

Air - Some of the milestone legislation related to discharges into the air includes the Clean Air Act of 1970 (CAA70), and subsequent amendments in the Clean Air Act in 1990 (CAA90). The CAA70 established National Ambient Air Quality Standards, or NAAQS. The CAA90 amended the earlier act and established a list of 189 Hazardous Air Pollutants, or HAPs with limits on how much could be released. Title V of the CAA90 created a federal and state permitting system with fees, and Title VII established enforcement authority with both criminal and civil penalties. The CAA90 also led to the promulgation of both the Process Safety Management standard and Risk Management Plans, discussed earlier.

Land – The Resource Conservation and Recovery Act of 1976, or RCRA, was enacted to regulate hazardous wastes from generation through disposal and protect groundwater from land disposal of hazardous wastes. RCRA also included a section to address underground storage tanks, or USTs, to ensure their integrity and keep the contents from leaking into the surrounding ground water. RCRA and subsequent amendments address the issue of waste characterization and minimization.

RCRA did much to regulate hazardous wastes generation, but did not address the problem of hazardous wastes at inactive or abandoned sites. The Comprehensive Environmental Response, Compensation, and Liability Act of 1980, or CERCLA, was enacted to cover this gap. CERCLA addresses cleanup activities at abandoned sites, and sets up provisions to identify the primary responsible party to cover cleanup costs. CERCLA was amended in 1986 by the Superfund Amendments and Reauthorization Act, or SARA. SARA increased state involvement in the Superfund program, and of special interest to the safety professional, included the Emergency Planning and Community Right to Know, or EPCRA provision. EPCRA was intended to increase the public's awareness of toxic chemicals in their communities by causing industries to report on toxic releases, and onsite chemical inventories through Tier 1 and Tier 2 reporting.

Working with Operations and Maintenance

The skills necessary to work with operating and maintenance units to ensure safe operations are the same as those necessary to ensure environmental stewardship. Safety and environmental professionals should demonstrate their value, and they are not just there to say “no”, but are committed to working with operations and maintenance to help them achieve their objectives in a safe, environmentally-friendly manner. Of course, that does not mean allowing problems to go unaddressed, but it does mean accompany identified problems with solution options when possible. It is also most valuable to emphasize the benefits of safe and environmentally friendly policies, rather than simply reiterating the punitive consequences of non-compliance. The professional must strike the appropriate balance between doing assessments

to improve programs, but being careful not to be viewed as overly critical; in other words, make your criticisms specific and meaningful so they count.

Safety professionals should always remember that a key to working with maintenance and operations managers is to establish solid relationships based on trust. Get to know people before a problem occurs; otherwise, their first encounter with you will likely be a negative one. Bring them options for addressing problems, if possible, and also bring good news when you can. If environmental performance is improving, discuss that and make sure they understand how much they are to be credited for it. As the safety or environmental professional, you have instant credibility, but it is capital that you should use sparingly. Be honest if something is your opinion as opposed to a regulation, and be ready to defend why you think changes should be made to the process. These strategies will help the professional gain and maintain credibility to drive organizations toward continuous improvement.

Conclusion

Working cross-functionally in both the safety and environmental areas is becoming even more commonplace than before, and that is a trend that will likely continue. The safety professional should embrace this situation as an opportunity to learn new information and grow as a professional. The same skills that make a successful safety professional also will allow the combination safety/environmental professional to succeed.

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