Achieving Operational Excellence Through Safety

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Overview

Every day, workplace injuries, illnesses and fatalities cause immeasurable pain and suffering to employees and their families as well as to the company itself. Recent estimates indicate that workplace injuries and illnesses cost American companies approximately $200 billion per year in wasteful and often preventable expenses. Effective management of employee safety and health protection is a decisive factor in reducing the extent and severity of work-related injuries and illnesses. Effective management addresses all work-related hazards and potential hazards that could result from a change in worksite conditions or practices.

Over the past several decades, American businesses have remained profitable and competitive in the local, national and global marketplace by focusing on cost reductions and improvements in productivity, efficiency and quality. Specifically, companies have utilized such business techniques as Six Sigma, Lean, Just In Time, Five S, and Quality Circles as tools to help their companies reduce costs and thus remain profitable and competitive. However, as the cost savings have been achieved in these areas over the years, the ability of companies to further reduce the cost from these areas has greatly diminished. As a result, companies in today's marketplace need to look at what additional areas in their businesses where cost savings can be achieved. The two major potential cost savings areas are in workers' compensation and healthcare. Safety is the common denominator within these two areas where significant cost savings can still be achieved, thus allowing a company to remain profitable and competitive.

The only way a company can focus on reducing workers' compensation and healthcare costs within its operation is through the development of an effective safety and health management system. The results of OSHA's Voluntary Protection Program (VPP) indicate that implementing an effective safety and health management system improves employee morale and productivity, significantly reducing workers' compensation costs and other costs of work-related injuries and illnesses as well as healthcare costs. These findings show that the best safety and health programs involve every level of the organization, instilling a safety culture that reduces accidents for employees and improves the bottom line for the company. As a result, any company can achieve operational excellence through safety by utilizing an effective safety and health management system.

This paper will examine two specific areas. The first area will discuss the elements of an effective safety and health management system. The second part of the paper will be a case study in which Milliken & Company demonstrated how they achieved safety operational excellence.

Development of an Effective Safety and Health Management System

Most experts agree that an effective occupational safety and health management program involves four elements. Those four elements are:

> (1) Management commitment and all employee involvement;
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> (2) Workplace analysis;
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> (3) Hazard prevention and control; and
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> (4) Safety and health training of all employees to eliminate or avoid hazards.

As a general rule, an effective program will include provisions for systematic identification, evaluation and prevention or control of hazards. Also, the program will go beyond specific requirements of OSHA standards to address all safety and health hazards.

<u>Management Commitment</u>
In looking at the first element of an effective safety and health system, it is clear that management commitment and all employee involvement are complementary. Management commitment provides the motivating force as well as the resources for organizing and controlling activities within the organization, while all employee involvement ensures full buy-in of the entire facility.

Management must clearly develop and communicate its safety and health policies to all employees. Part of the management commitment is to demonstrate that commitment by instilling accountability for safety and health, obeying safety rules, as well as conducting and reviewing accident investigations. Part of this management program involves conducting regular safety and health meetings involving employees, managers, and supervisors. Furthermore, it must assign responsible persons to coordinate safety and health activities and, at the same time, integrate safety and health into business practices throughout the entire organization. Having safety as a performance metric for all managers and supervisors is also a strong demonstration of management commitment.

Employee involvement provides the means through which all employees develop and express their own commitment to safety and health protection. Management must encourage and provide the opportunity for all employees to get involved in the program in decisions that will affect their safety and health. This includes inspections or hazard analysis teams, developing or revising safe work rules, training new hires or coworkers and assisting in accident investigations. Also, management should, as part of the employee involvement, recognize employees for safe and healthy work practices. Finally, as part of the management commitment/employee involvement element, managers, supervisors and employees must be held accountable for meeting their responsibilities for a safe and healthy workplace.

<u>Workplace Analysis</u>
The second element of an effective safety and health management system is worksite analysis. Worksite analysis involves a variety of worksite examinations to identify not only existing safety

and health hazards but also on-site conditions and operations where changes might occur to create additional safety and health hazards. Effective management and employees actively analyze the work areas and worksites to anticipate and prevent harmful safety and health hazards. In addition, management must reevaluate workplace activities where changes in processes, materials, machinery, and so on, have occurred and may have created new or different safety and health hazards.

As part of the worksite analysis, the company should conduct comprehensive initial and annual audits involving safety and health. Such surveys could encompass conducting regular site inspections, which may include daily work area inspection procedures as well as the use of checklists for reviewing safety and health issues throughout the site. Also, the employer should provide a reliable mechanism for employees to notify management about apparent hazards and conditions and to receive timely and appropriate responses without fear of reprisal. In addition, with the assistance of employees, management should analyze planned and new facilities, processes, materials, and equipment. Part of this program would be to perform job hazard analysis on each operation in the worksite. Part of this worksite analysis is the investigation of all accidents and near misses to determine their root causes. The employer should also analyze injury and illness trends by reviewing its OSHA 300 logs so that recurring injuries and illnesses can be identified and prevented.

Hazard Prevention and Control

Once the hazard analysis has been completed, which is an on-going process, the employer can review those safety and health hazards identified, and implement the third element of the effective safety and health management system, namely, hazard prevention and control. This element is triggered by the determination that a hazard or potential hazard exists. Where feasible, the employer should try to prevent the hazard by implementing the necessary engineering or administrative control, including effective design of job or jobsite. Where the hazard cannot be eliminated, the employer must determine what processes or procedures must be implemented to control the hazard to prevent any unsafe or unhealthful exposure to employees. This can include the use of personal protective equipment (PPE). It is clear that the elimination or control of the unsafe or unhealthy conditions must be done in a timely manner to ensure the safety and health of the company employees.

The employer has many options as to procedures and methods that can be utilized to timely correct or control safety and health hazards. As noted above, such controls can include engineering techniques, where feasible and appropriate, and procedures for safe work that are understood and followed as a result of training, positive reinforcement, and correction of unsafe performance as well as enforcement. The providing of and requirement to use PPE is also a way to control the safety and health hazard to the employee. In addition, the employer can utilize administrative controls, such as job rotation, as a method for correction or control of the identified safety and health hazards.

In determining how to prevent or control safety and health hazards at the worksite, the employer should look to the best practices within the industry. Obviously, it is important to provide the necessary safety and health equipment for the facility, as well as to provide for the maintenance of that equipment. Also, an emergency action plan should be implemented that would include, among other things, training for dealing with the emergencies, as well as actual drills to ensure that the employees understand what to do if the emergency occurs. In addition, the employer should ensure that it has a first aid/medical program in place to deal with the type of

safety or health issues that could occur in the facility. This would include having first aid on-site, as well as medical or emergency care available if required.

<u>Employee Safety and Health Training</u>
The final element of an effective safety and health management system is the training of employees on all safety and health issues to which they will be exposed. Specifically, this safety and health training will address the safety and health responsibilities of all personnel, whether they are management or hourly. Many experts in the field of safety and health agree that the most effective way to implement a safety and health training program is to incorporate it into the training about operational requirements as well as other job practices.

As part of any training, the employees must understand the specific safety and health hazards to which they may be exposed and how to prevent harm to themselves as well as to coworkers. The facility's initial orientation training must be provided to all site and contract employees. Part of any safety and health training must address managers' and supervisors' responsibilities as well as the employees' role in safety and health. Part of the training must focus on ensuring that supervisors carry out their safety and health responsibility, which may include (1) analyzing the work under their supervision to identify unrecognized potential safety and health hazards; (2) maintaining physical protections in the work areas; and (3) reinforcing employee training through continual performance feedback and, when needed, enforcement of all safety and health work practices. Finally, the specific safety and health training that will be needed will include hazard recognition, training required under OSHA safety and health standards, emergency response, accident investigation, and emergency drills.

<u>Summary</u>
By fully implementing the above-discussed four elements of an effective safety and health management system, the company places itself in the best position to derive the benefits from having such a management system in place. Those benefits, as noted above, include reducing work-related injuries and illnesses, improving morale and productivity, reducing workers' compensation costs, and being more profitable and competitive in the marketplace. By implementing these four elements of an effective safety and health management system, an employer can also keep jobs here in the United States. Clearly, the tremendous cost savings that have been achieved by those companies implementing an effective safety and health management system, especially those in OSHA's Voluntary Protection Program (VPP), demonstrate how such a system allows the company to be profitable and competitive while, at the same time, allowing all of its employees to go home safe and sound to their families and loved ones each and every night.

The Future of Safety Operational Excellence

World-class companies continue to upgrade, modify, change or revise their processes continuously. They also continue to benchmark and network best practices in other world-class companies. That's because your dependence on antiquated safety procedures is no guarantee that you are protecting your associates/employees/workers properly now or will be able to do so in the future. In fact, future safety will require a system/process approach versus a program mentality. Programs have an end, whereas systems and processes do not. This system/ process overview will include the Milliken Safety Process system, a model engagement system assessing the organization in order to change the organizational culture for associate, employee, and worker safety ownership.

The future will require companies to involve and empower the associates, employees, and workers in the process. Safety must be a partnership between management and production. Safety must be integrated into everything a company does in order to achieve operational excellence. To have a win-win situation, a positive environment with positive motivation and morale must be created. The process must deal with facts and data. The process must also have the tools to capture the cause, and the process should have the right organizational structure. The responsibility for the process should include management, administration, and production.

This paper will demonstrate how Milliken has shown that a dedication to safety and quality has a dramatic impact on operational excellence. That has directly led to it thriving in the highly competitive global textile and chemical industry.

The Milliken Safety System History

The Milliken Safety System is an uncompromising quest for zero incidents. The Milliken safety journey to world-class safety and operational excellence performances involve six major keys (Figure 1).

Figure 1. These are the six major keys to world-class safety.

Safety Is a Journey

Our Journey Began

In the beginning, Miliken's purpose could be summarized by the following statements:
- Learning how to engage and empower our associates in something that was personal to them (mid 1980s).
- Safety/Health became a core value in our company.
- Safety was placed on the corporate calendar.
- Safety was developed into a system with steps and *milestones*.
- Safety was the foundation of our operational excellence system.

Beginning in 1985, our timeline included implementing an associate involvement process. Leadership began learning how to listen to the associates and respond through an Opportunity for Improvement (OFI) system whereby the ideas, recommendations and suggestions of the associates were captured and responded to within 24 hours. Our journey to world-class safety officially began in 1990. Our safety process had plateaued and, even though our safety performances were much better than industry, we had to change our process. The goal established for our company in 1990 was "zero" incidents, which was issued by our CEO. Safety was the number one core value and was placed on the corporate calendar. All corporate meetings had safety as the first agenda item. In 1992 we partnered with OSHA in the VPP STAR site program (see Figure 2). We invited OSHA inspectors into our plants to view our processes. All of our manufacturing locations were VPP STAR certified, along with our corporate headquarters. In 1993, we created self-directed work teams, and in 1997, we introduced the behavioral based safety concept. We continued with and improved the behavioral safety concept and, in 2003, we focused on a new process called residual risk reduction (R3).

Questions We Asked During Our Journey

During our journey we asked ourselves very tough questions. The questions included:

- What were we trying to do?
- Did we have a burning platform?
- Did we have the awareness and desire to move forward on our safety journey into the future?
- Did we have the knowledge base to develop a statistically significant process?
- Did we have the ability and the capability to develop our associates' skills and behaviors to the point of statistically significant improvements in our metrics?
- Were there recognition and rewards in our system to establish a sustainable process that could grow in the future?
- Was safety/health integrated into the way our associates performed their job functions?
- Did we understand how to engage our associates?

    And, ultimately:
- How did we know when change (**success**) occurred in our operation?

The Milliken Safety System

The journey to operational excellence involved the following:

Safety Organizational Structure
Figure 3 shows the Milliken & Company Safety Organizational Model that was driven from the bottom up. Milliken & Company associates were involved, empowered, and engaged to the point that they could truly take ownership of the safety process. Leaders were then required to be references, resources, and ultimately coaches for this organizational structure.

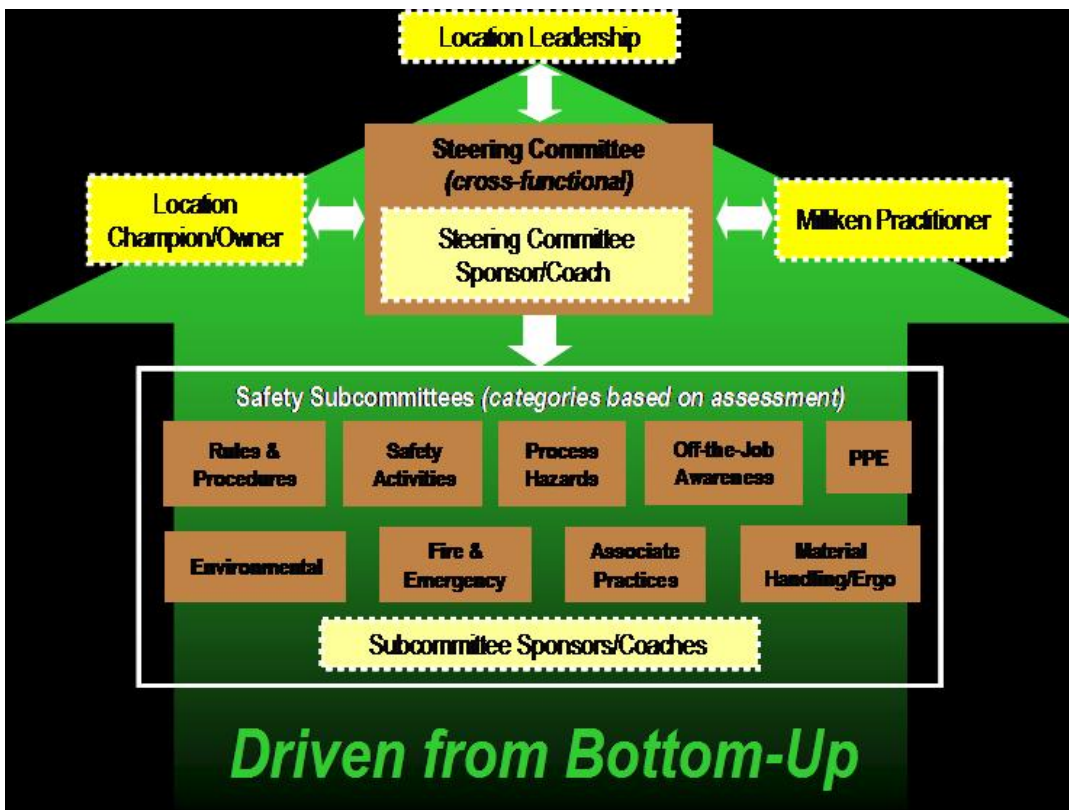**Figure 2. This is a foundation of Seven Pillars of Safety Excellence.** (*Source* OSHA, VPP)

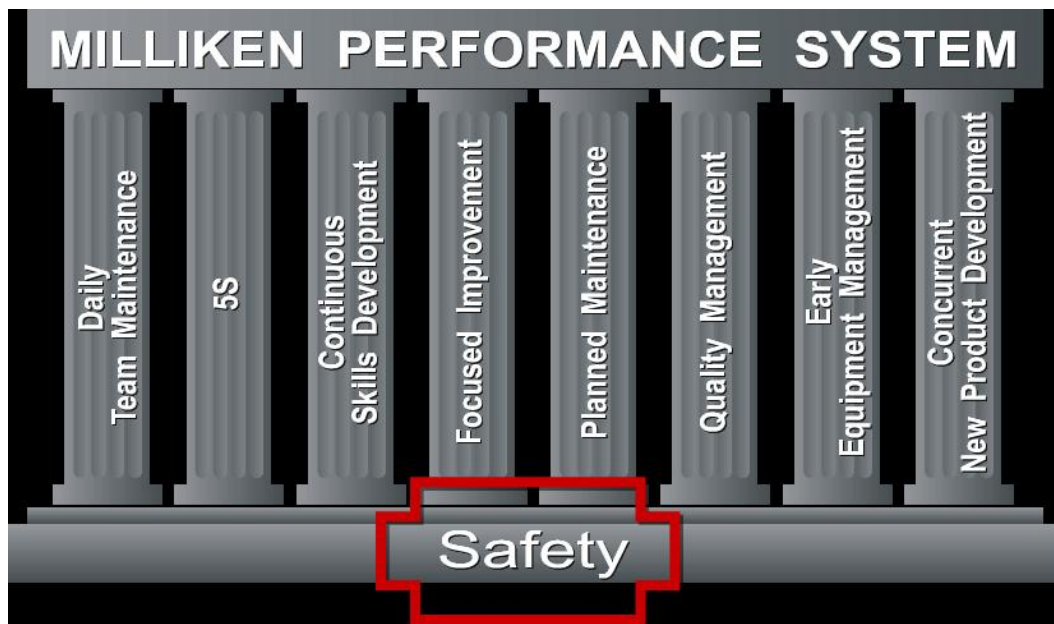**Figure 3. This is the Milliken safety model.**

The operating system road map included eight phases. These phases were:

- Definition of process/journey

- Methodology

- Metrics: Process measurement, business case, operational metrics

- Process Hazards: Recognition and control, risks

- Audit/diagnosis: Inspections, code compliance, conditions, behaviors

- Recognition/rewards: Communication, feedback

- Results – Business case opportunities, incident rate reduction, incident severity reduction

The Results

Safety Integration into the Milliken Performance System
Figure 4 shows the Milliken Performance System model of operational excellence pillars with safety as the foundation:

Figure 4. This is the Milliken performance system model.

Figure 5 is a 29-year trend analysis of the incidence rates of all industry, the textile industry and Milliken & Company:

Figure 5. This is the industry trend chart.

Safety as a Corporate "Value" System
Milliken & Company has achieved world-class levels of safety performance through a proprietary system developed over the last decade. The Milliken Safety System fundamentally changes not only the safety performance of an organization, but creates a culture of engagement, accountability, and sustainability that is foundational for continuous improvement. This involves the changing of roles and responsibilities.

Safety (The Business Case for Operational Excellence Strategy)
The criteria for operational excellence are:
I.   Leadership (*Commitment/Support/Involvement*)
II.   Organizational Structure (*Roles and Responsibilities*)
III. Education (*Leadership/Coaching/Teams*)
IV.   Metrics (*The Costs of Safety*)
    A. Are losses identified?
    B. *Workers' Compensation, Indemnity, Medical, Administrative*
    C. Are losses tied to key plant metrics?
    D. Are plant metrics tied to corporate strategic metrics?
    E. Are operating system metrics identified and reviewed on a period basis?
    F. Are operations system metrics tied to recognition/reward?
    G. Is there a plan/method for making the metrics visible throughout the organization?
V.   Communication & Change Readiness
VI.   Process Hazards & Risks (*Recognition and Control*)
VII. Audit/Diagnosis Systems in Place

VIII. Business Continuity/Contingency
    A. Emergency Preparedness
        1. Fire/Inclement Weather
        2. Injury/Illness
        3. Workplace Violence
        4. Environmental
        5. Bomb Threat
        6. Security
        7. Crisis Communication
    B. Leadership Review and Sign Off (*Corporate Calendar*)

Why is Milliken & Company so safe? The answer to this question involved the nine keys (tenants) of our journey. These included:

1. **Management Commitment, Support, and Involvement.** Senior leadership was the functional owner of the process.
2. **Standardization.** Standardization included the detailed roadmap of how the system was indexed.
3. **Organizational Structure.** All locations in Milliken & Company had the same safety cross-functional organizational structure, with production and administrative associates owning and driving the safety process, and leadership providing the references and resources to make things happen. This was the bottom-up approach with leadership driving the value.
4. **Awareness and Tolerance Level.** All locations were challenged to brainstorm awareness activities that would keep the journey fresh. The associates became very creative on how to demonstrate what it would take to make the plant safe. They also accepted responsibility and were accountable through projects and audits.
5. **Reporting.** All incidents were reported and all locations were force-ranked on a monthly basis. Safety measures were reported in all senior leadership meetings.
6. **Time and Dollars**. All safety issues and opportunities were addressed, whether there were dollars involved or time. Cost was never an obstacle to providing a safe place to work in Milliken.
7. **Education.** All Milliken employees were required to have a minimum number of safety education hours per year. These education courses were topic-specific and required comprehension tests.
8. **Measurements**. All statistically significant metric systems were used. Leading and lagging indicators were analyzed in detail.
9. **Case Management**. Injury and illness prevention programs were in place in all Milliken locations. Reporting incidents, management accountability, and employee accountability allowed Milliken & Company to have one of the best case management systems in industry. Costs per employee were extremely low.

Summary

Milliken's employee-centric approach to improving safety and quality is designed to build an organic, internal capability that is permanently infused into the organization. It is not a process for process sake. It is a process for one reason—to drive safety results. Lean and Six Sigma, by contrast, are tools for problem-solving; and tools can't transform your culture.