

Implementing a Safety Management System to Achieve World-Class Safety Performance

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Introduction

Midwest Generation (MWG), an independent power producer that operates seven electric power-generating plants, has drastically changed its safety performance for the better. Over a three-year engagement period from 2007 to 2010, DuPont helped MWG move toward world-class safety performance – and a 73 percent reduction in its incidence rate – by developing and implementing a safety management system that is focused on the organization’s operations as a whole.

This paper will showcase the MWG case study and the lessons learned to discuss how organizations can utilize the key takeaways to improve their own company’s performance. Specifically, the case study can help address questions including:

- Why is a safety management system important?
- How does a safety management system affect all members of the company, both from the top-down and the bottom-up?
- What are some of the ways that a business can create a culture of safety?
- What barriers do companies face to achieving world-class safety results?
- How can companies maintain superior safety performance?

The High Cost of Poor Workplace Safety Practices

Workplace safety is a challenge to every company, regardless of the type of work performed or the physical environment, though certain industries present more hazards than others. The U.S. Bureau of Labor Statistics estimates that approximately 3.3 million serious work-related injuries and an estimated 4,300 fatalities occurred in 2009.

In addition to the obvious risks and consequences of poor workplace safety practices, there are financial and reputational consequences that businesses with poor safety performance face. The 2010 Liberty Mutual Workplace Safety Index calculates the cost of workplace injuries and illnesses in 2008 at over \$53.42 billion in direct U.S. workers compensation costs. According to a 2010 study from the National Opinion Research Center at the University of Chicago, workplace safety is also at the forefront of employee concerns, as more than 85 percent of workers rank workplace safety first in importance among labor standards.

Addressing the Issue

In 2006, MWG was facing an increase in the severity of injuries, which included fatalities, at its coal-fired plants. The company is an independent power producer that operates six electric power generating plants in Illinois and supervises operation of the EME Homer City generation plant in Homer City, Pa. It sells electricity in competitive wholesale markets and competes in a 13-state region that extends from the Atlantic coast westward to Illinois. MWG is part of Edison Mission Group (EMG) who manages the competitive power generation business and other subsidiaries of California-based Edison International, a generator and distributor of electric power and an investor in infrastructure and energy assets, including renewable energy.

Senior leadership at EMG and MWG, including Len Tully, Safety Director; Guy Gorney, former Senior Vice President of Generation; and Ted Craver, then President and CEO of Edison Mission Group (now chairman of Edison International), asked DuPont to assist the organization in moving toward world-class safety performance.

During the three-year engagement that followed, DuPont:

- Evaluated MWG's safety management system against world-class systems;
- Identified opportunities for improvement in the management of workplace safety and process safety; and
- Provided recommendations for the development and maintenance of a world-class safety system at MWG.

Assessing Concerns and Opportunities

As a first step, EMG and MWG management undertook a comprehensive assessment with DuPont that identified key areas of concern and opportunities for improvement. The assessment was used to develop a high-level path forward for continuous safety improvement over the three-year engagement period of 2007 to 2010.

The assessment discovered that MWG's safety culture was reactive and compliance-focused. While there were pockets of safety system skills in the organization such as the incident investigation process and its safety committees, they were insufficient to achieve the highest standards of safety performance.

Additionally, the assessment showed that established safety goals encouraged only incremental improvement. MWG lacked sufficient safety management knowledge to achieve world-class safety performance. There was a significant gap in the organization's ability to identify and mitigate risk, and inconsistent safety management practices were a barrier to rapid improvement. Finally, it was clear that MWG's primary concern was improving the overall safety and welfare of employees.

Based on this assessment, MWG and DuPont agreed that the primary goals of the engagement were to:

1. Reduce employee injuries and ultimately create an injury-free workplace.

2. Transform the safety culture from a reactive, compliance-focused one to an interdependent one (as defined by the DuPont Bradley Curve) that is proactively focused.
3. Develop the skills and capabilities of the line organization to more effectively manage all aspects of the operation by establishing and maintaining high standards of performance.

Priority #1: Making a Cultural Shift

One of the most important aspects of creating world-class safety performance, according to the extensive work DuPont has done with organizations throughout the world, is to instill a culture of safety. This means that organizations must make safety a priority across all levels of the organization, all business units and all decisions.

Workplace safety should not be the sole responsibility of the safety manager. Company leadership must show that safety is critical to success through their actions, middle management must carry this message, and employees must focus on their own safety as well as the safety of others.

EMG and MWG leadership also realized that the company needed to make changes to create a strong safety culture and reach its goals. They determined a number of actions that that would help make this cultural shift.

First, they were determined to demonstrate that good safety is good business by making it at least as important as production and quality.

Second, they sought greater input from stations and included it in the process for setting challenging goals and defining action plans.

Third, they expanded the safety leadership organization by involving all levels of employees and management.

Fourth, they established the corporate safety policy as the driving force behind systems and processes for managing safety.

Fifth, they determined that all, not just some, potential workplace safety hazards needed to be identified, analyzed and safe guarded.

Sixth, they created a comprehensive, structured auditing system that involves all levels of the organization, collects data, and use this data as a change agent.

Seventh, they eliminated the potential for hiding injuries by encouraging a culture where injury treatment and prevention take priority over financial incentives.

Eighth, they ensured that everyone on a station site, including contractors, is required to comply with a consistent set of safety policies and regulations.

Company Safety Principles

The organization adopted, communicated, and reinforced the Midwest Generation Safety Principles to create a strong safety culture.

Midwest Generation Safety Principles

- All injuries and occupational illnesses can be prevented
- Employee involvement is essential
- Management is responsible for preventing injuries
- All operating exposures can be safeguarded
- Training employees to work safely is essential
- All employees are expected to work safely
- Safety Observations are a must
- All deficiencies must be corrected promptly

Exhibit 1. Safety principles adopted by Midwest Generation

Implementing an Improvement Strategy

Although leadership commitment and support were key drivers in building a safety culture, MWG and the DuPont consulting team agreed that the greatest success would be achieved through implementing an improvement strategy that included seven essential steps:

1. Establishing a strategic safety management structure;
2. Developing and introducing safety process systems in the areas of safety observation, incident investigation, rules and procedures, and communications-activities-involvement;
3. Developing performance standards and metrics to monitor safety performance;
4. Building safety leadership competencies at all levels of the organization;
5. Expanding workplace safety systems to include contractors;
6. Establishing process safety reviews to identify and mitigate risks from high hazard operations; and
7. Training employees and contractors on the new safety systems and processes.

MWG, with support from DuPont, developed and implemented a safety management system, focused around the operations environment. It provides the organizational, process, and skill infrastructure needed to broaden the perspective of safety, incorporate accountabilities and move MWG towards being an injury-free workplace. It was accomplished through a comprehensive three-year strategic process that included: defining and documenting safe work standards; reinforcing standards and expectations through auditing and observation; fostering employee involvement through activities and communication; preventing incident recurrence through incident investigation; incorporating safety into contractor relationships; and driving accountability through actionable information.

The improvement strategy was organized by DuPont and implemented in three phases to drive positive organizational results.

First, a division safety system was designed. DuPont and MWG established a division-level safety governance structure and designed the future-state MWG safety system and processes. These processes were piloted at individual sites prior to a broader rollout.

Second, a Central Safety Committee was initiated at each site, and sites prepared for the rollout of the MWG safety system and processes.

Third, all levels of the organization participated in safety leadership training and development workshops and a detailed re-assessment of the new system and processes were completed at each site along with additional activities designed to drive cultural assimilation and optimization.

DuPont helped MWG manage the necessary internal changes through its proprietary process improvement framework, which includes assessing the current state, envisioning the future state, planning the transition, and implementing the change. It was also critical to the success of the implementation to ensure continual two-way communication among all stakeholders involved in safety management at MWG, including the corporate safety committee, steering team, top leadership, team leads, process improvement teams and employees.

An annual Safety Summit was created to help maintain and strengthen improvement across all of EMG. Each year, successes are celebrated at the summit and continuous improvement opportunities are identified. As a result, this event has helped anchor and reinforce safety sustainability throughout the company and over time.

The work with MWG has been expanded to now include EMG facilities in other parts of the country, so that processes and practices are consistent across all of EMG and its fleet of more than 40 coal, gas and wind generating facilities in 13 states.

Results Show Effectiveness of Safety Management System

A key deliverable for the MWG steering committee was to achieve at least a 60% reduction in injuries to MWG employees against a 2006 year-end baseline. This would represent a major milestone on a path to zero injuries.

By year-end 2010, MWG reduced its incidence rate by 73%, DART rate by 68% and LWDC rate by 72%.

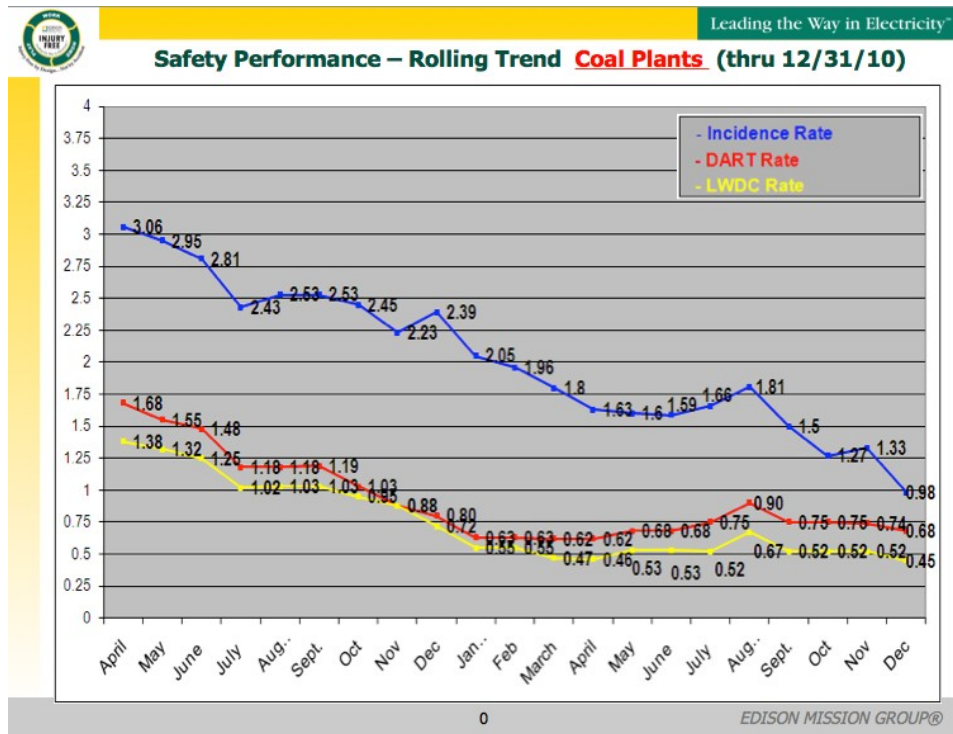


Exhibit 2. Safety performance incidence, DART, and LWDC rate reductions reported by MWG.

Conclusion

To maintain a world-class safety management structure and safety culture, an organization must establish high safety standards; regularly review its performance, monitor operations and processes; make needed improvements promptly; and continue safety training, coaching, and other awareness-building activities so that all employees understand their responsibilities and know how to work safely. Today MWG continues to operate by the core set of safety principles that DuPont helped the company develop and implement.

In addition to reducing injuries, the most important benefits of implementing a world-class safety management structure at EMG and MWG included the development of a work environment that fosters trust and openness and invites collaboration between company management and its employee union. The process has also created professional development opportunities for employees in the areas of safety management, project management, team building, process methodology, and leadership skills.

The bottom line: Achieving and implementing a safety management system not only reduces workplace injuries, but positively impacts an organization’s culture, bottom line and reputation.