

A Real World Journey: From High-Profile Media and OSHA Adversity to VPP Success

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Introduction

In 1921, J.R. McWane established McWane Cast Iron Pipe Co. in Birmingham, Alabama. Although he could not have known it at the time, he founded what would become one of the largest foundry companies in the United States. The company grew slowly at first, with only a single additional facility built in Provo, Utah in 1926. Today, however, McWane which is a family owned company employs approximately 6,000 people across the United States, Canada, China, and Australia at 25 operating locations.

McWane's primary business groups consist of foundry and steel fabrication and focus on safe, environmentally friendly manufacturing of ductile iron pipe, water works fittings, fire hydrants and valves, fire extinguishers and tanks used for the storage of water and propane. Our products are integral to the functioning of plumbing and water works systems throughout North America, making pipe that brings potable water to homes and businesses, and products that allow our communities to safely treat and recycle their water. We are a leading provider of water, sanitation, and fire safety infrastructure products to nearly every state in the nation and most recently, a new entrant into the electrical utility business.

The processes at McWane's pipe, valve, hydrant, and fitting facilities are very similar to those used by other foundries. These processes include melting and molding of iron, transporting rough castings via extensive conveying systems, and finishing operations that include grinding, cement lining, and painting. These processes produce high temperatures that require the use of huge, complex, and extensive machinery and equipment. This dynamic, often demanding environment, presents the foundry industry with many unique safety and environmental challenges. However, McWane has always been committed to meeting these safety and environmental challenges for the benefit of both employees and the communities we serve.

The History: Dynamic Company Growth

The iron foundry industry is very competitive, and has been consolidating for decades. As this trend accelerated, McWane management saw an opportunity and a challenge to preserve America's foundry

industry. McWane purchased some of these struggling plants and through substantial investments of capital, McWane transformed them into modern, efficient, and productive operations, saving thousands of American jobs and millions of tax dollars. Thus, while dozens of other pipe and fittings foundries closed or consolidated in the face of foreign competition, McWane underwent rapid and dramatic growth over a short period of time. In 1977, McWane was a company of 4 facilities with 840 employees. In 1994, there were 11 facilities with 2,900 employees. But by 2000, we had more than doubled in size to 28 operating facilities with 7,000 employees. During this period of rapid growth, the company did not recognize the extent its management system was being overwhelmed, and the company became the subject adverse media publicity beginning with articles in the *New York Times* and stories broadcast on *Frontline* beginning in January 2003.

The focus on McWane in these stories centered on only five of McWane's 28 facilities and did not include positive efforts that were in place at McWane's other locations. Additionally, these stories neglected to indicate that as problems started to materialize, the Company dealt with them, learned its lessons, and actually had been in the process of a significant change since 1999. However, in the process of responding to this media intensity, the efforts of McWane's EHS program were significantly improved through an enhanced and expedited strategic approach.

The Strategic Approach: Five Key Elements

In 1999, a visible cultural change emerged with a new management organization change in Company Chairman, C. Phillip McWane, and President and CEO, G. Ruffner Page. Mr. Page's vision for Environmental Health & Safety, which is emphatically supported by Mr. McWane, is that McWane will be a recognized leader in EHS with management commitment, beyond compliance expectations, best in class EHS programs, and employee engagement. This new culture was emphasized through a strategic approach consisting of the following five elements:

- Increasing external and internal expertise
- Accelerating the culture change
- Implementing a comprehensive EHS Management System
- Integrating a strategic approach to Human Resources, and
- Enhancing employee, community, and regulatory outreach

McWane has created an Environmental, Health, and Safety (EHS) Program that goes beyond compliance and which we believe is a benchmark for the U.S. foundry industry. Integrating these EHS efforts with Human Resources (HR) functions, McWane has established a corporate culture with a shared commitment by corporate and plant management, environmental professionals, safety professionals, and every employee that not only supports, but demands, excellence.

Key Element 1: Increasing External and Internal Expertise

An initial step in the strategic approach included a thorough and candid assessment of the status of our programs. We sought out nationally recognized experts and advisors to assist the process. These experts helped update our existing strategic plans to guide our efforts. Our strategic plans are continuous works-in progress, and are updated and revised as part of our EHS management system to ensure they remain effective and viable.

We also recognized the need to make some internal organizational changes as early as 1999 when we began to make dramatic organizational and personnel changes and improvements. McWane started by educating and training our personnel about our new vision and expectations and hired new employees to replace those who could not adapt to the new programs. We implemented a 90% change of senior management personnel and added more than 175 new people or positions with EHS and Human Resources responsibilities. We also reorganized our management structure to establish a robust Corporate EHS function to give more central direction and oversight of our EHS and HR efforts.

Each domestic facility has, at a minimum, one environmental professional, one human resources professional, and one safety and health professional, who report directly to the senior manager on site; however, the majority of facilities have a more extensive staff of EHS and HR professionals, including managers, technicians, engineers, program coordinators, and facility nurses.

At a more strategic level, to give overall direction to the program and to ensure that our EHS efforts are integrated with day-to-day business operations, we've also established an EHS Steering Committee. The Steering Committee includes McWane's CEO, CFO, Executive Vice Presidents with responsibility for each operating group, VP and Treasurer, General Counsel, Corporate EHS and HR VPs, and outside consultants.

Key Element 2: Accelerating a Culture Change

Early in our planning, we established three principles upon which to ground our program:

- *Compliance:* A commitment to managing our business activities to meet all governmental laws and regulations as well as internally established environmental, health, and safety requirements that at times exceed governmental requirements. Our goal is 100% compliance, 100% of the time.
- *Protection:* A commitment to conducting our activities in a responsible manner to protect our employees, the public, and the environment, and to minimize any adverse impact from our operations. We also want our operations to be sustainable—meeting the needs of the present without compromising the ability of future generations to meet their own needs.
- *Continual Improvement:* A commitment to continually improving our environmental, health, and safety performance.

To implement these principles, we needed to rely on processes and management systems to drive the culture forward, changing it from fire-fighting to strategic, from decentralized to more centralized (while maintaining the entrepreneurial spirit of our locations), from reactive to proactive, and from short-term to long-term. It was important that our culture fostered the principles of a management system approach rather than the traditional EHS program approach.

These cultural changes included publication of an enhanced Ethics and Compliance Policy that instills a commitment to ethical behavior and legal compliance across the company, an EHS brochure outlining EHS responsibilities of all employees, facility EHS goals linked to Corporate objectives, managers' annual performance appraisal evaluations and ratings which included EHS, issuance of a monthly metrics report on EHS performance, and penalties on senior managers' bonuses for not meeting EHS performance expectations.

Employee training is also a key component for enhancement of a culture change. At McWane, we have invested significantly in the training of our employees, so every team member has the relevant

knowledge and expertise to implement our EHS and HR programs effectively. In 2003, McWane established *McWane University* as an umbrella concept for our training and education efforts. It includes programs to instill the “McWane Way,” a management philosophy based upon a commitment to a core set of values centered on integrity, competence, respect, and fairness. This philosophy is also set out in our comprehensive Ethics and Compliance Policy that must be signed and acknowledged by all salaried employees.

On an average annual basis, all new hires receive between five and ten hours of Health & Safety training as part of their orientation followed by specific job-related training as appropriate. Each McWane employee also receives in excess of 35 hours of EHS training annually on topics associated with regulatory compliance and McWane EHS systems. Completion of the 10- hour OSHA General Industry Safety and Health Course and the National Safety Council’s Supervisory Safety Development Course or equivalent is required for all managers.

The company also encourages employee input by designating hourly employee safety representatives and through joint health and safety committees. Members of these committees, which include plant management and hourly employee representatives, have participated in joint training sessions that included OSHA training as well as additional training on the roles and responsibilities of safety committees.

Key Element 3: Implementing a Comprehensive EHS Management System

Managing the EHS issues of a heavy industrial enterprise with dozens of manufacturing plants, including 13 iron foundries, is a complex task. Recognizing these challenges, in 2002 McWane began the development of an innovative and coordinated EHS Management System. Our EHS Management System is based upon the principles of ISO 14001 (an international standard for environmental management systems), the draft ISO 18001 (occupational health and safety standard), and OSHA’s Draft Health and Safety Management Guidelines. The EHS Management System provides all McWane facilities with an infrastructure for identifying significant EHS issues, setting measurable goals, and establishing and coordinating consistent management practices for all EHS activities, including recordkeeping and reporting.

The foundation of the EHS Management System is the company’s EHS policy. McWane has issued multiple EHS directives that address the various aspects of EHS management, including: compliance; management commitment and leadership; roles, responsibilities, and accountability; personnel and training; information systems and documentation; hazard assessment, prevention, and control; management of change; significant matters reporting and investigation; goals and objectives; management review; emergency preparedness and response; contractor management; pollution prevention; employee involvement; community outreach; managerial employee performance evaluation; communication; and records and document control.

At the next level are hundreds of detailed procedures and site-specific work instructions on how the EHS directives are to be implemented, with specific step-by-step instructions related to everything from environmental recordkeeping to confined space entry. These work instructions give our employees specific guidance on how to perform their jobs and responsibilities in a safe and compliant manner.

To make these program elements accessible and functional, McWane has invested in state-of-the-art information technology systems. At the core is the EHS Management System website hosted on Sharepoint. Its dashboard feature allows users to quickly and easily access information company-wide

and link to other electronic tools such as OpsInfo, Dakota Tracer, and Medgate. OpsInfo is a comprehensive web-based software system for electronic management, tracking, trending, analysis, and reporting of environmental data and information. The web-based Dakota Tracer system allows our company to track corrective actions from environmental, health, and safety audits and inspections with advance email notifications of due dates. The Medgate system, one of the most advanced occupational health and safety software systems available, is used to monitor safety and health activities and performance, including tracking of all completed employee training.

To assess overall compliance, identify areas that need improvement, and provide valuable feedback about the state of our progress, McWane regularly conducts environmental and health and safety compliance audits at all of its operations. These audits are conducted both internally and by independent third parties. Our scores on these audits have improved steadily each year, and the number of citations resulting from agency inspections has likewise dropped considerably. Similarly, internal facility inspections are conducted on weekly, monthly, and quarter intervals with EHS managers, hourly department representatives, supervisors, and other managers. These inspections have an escalation of purpose and focus and encompass requirements of our Health & Safety procedures.

Twice each year, each location, with participation from all levels of their organization, also conducts a management review of their entire EHS management system. The purpose of these reviews is continuous improvement with findings reported electronically and tracked to closure.

Annual OSHA recordkeeping audits are also conducted by an external law firm in which every employee medical record, incident investigation, and workers' compensation payment is analyzed to ensure the injury/illness rates for every location are accurate.

Key Element 4: Integrating a Strategic Approach to Human Resources

In concert with the training initiatives for EHS under *McWane University*, specific training in Casting Leadership Excellence is given to management personnel. This supervisor development program has a goal of equipping managers with the knowledge, methods, practices, and skills to be effective leaders, to enhance their potential for growth within McWane, and to mold the company's culture.

Clear Management Training is another innovation supervisor training program based on teaching self-awareness based on teaching self-awareness, strengths-based leadership, team development, and planning through participatory, team-based training.

Recognizing that communication and awareness is a key element of successful EHS and HR programs, the company provides an annual report on EHS performance, plans, and developments as well on general company news to its employees and communities through the award-winning McWane Magazine. Our facilities, as well as the Corporate Health & Safety department, also publish periodic newsletters containing articles of on and off the job safety. McWane's public website, www.mcwane.com also provides our employees and the public a wealth of information regarding our EHS initiatives.

All McWane employees are also encouraged to communicate any concerns about environmental, health, and safety matters to their plant or corporate management, either directly or through EHS suggestion boxes and the Safety Alert system. As an additional reporting mechanism, we have set up a well-publicized, confidential, toll-free, 24-hour Access Hot Line for reporting suspected violations of law, regulation, company policy, and other concerns.

Key Element 5: Enhancing Employee, Community, and Regulatory Outreach

We believe that maintaining positive communication with the regulatory community at all levels is vitally important. We have devoted great effort toward informing EHS regulators, including OSHA, EPA, and the various state agencies, about our plans and our progress. This effort includes being transparent about mistakes, reporting them as they occur, and cooperating in resolving them. Our robust EHS system and increased emphasis on training, ethics, and overall compliance has given us the tools to identify problems, and to respond immediately and with complete transparency vis-à-vis regulatory agencies. In one such outreach, representatives from federal OSHA visited our Clow Valve foundry in Iowa to benchmark best practices for safety and ergonomics for the foundry industry.

Early in the process McWane also entered into a cooperative effort with the United Steel Workers, to conducted training for members of our facilities' joint health and safety committees and hourly departmental safety representatives at locations which are represented by Steel Workers. The course included the OSHA 30-hour course plus an additional 10 hours on roles and responsibilities.

McWane has also worked hard to develop open and cooperative relationships with the communities where we do business. To facilitate the communication that is essential to such relationships, McWane has created Community Advisory Panels (CAPs) in communities surrounding several McWane facilities. Each CAP includes plant representatives and community leaders who meet periodically to discuss issues of common interest and concern. Through the CAPs, foundry personnel and local residents have joined together in such projects as neighborhood planning, neighborhood clean-ups, walkathons, United Way campaigns, and adopt-a-school programs.

Furthermore, the McWane Foundation continues its long charitable heritage through philanthropic investments in the communities where McWane employees live and work. The McWane Foundation has quietly provided approximately \$24 million in the past 10 years to many projects.

In addition to their internal responsibilities, many of our EHS personnel have held important positions in professional organizations, including the Board of Directors of the National Safety Council, the Environmental and Health and Safety committees of American Foundry Society, and the National Technical Publications Advisory Committee for the American Society of Safety Engineers. Their leadership and active participation is a part of our commitment to share the lessons learned during this process, in the hope that other companies can avoid the same mistakes we made and benefit from the lessons we learned along the way.

Consistent with our principles of protection and continual improvement, our company has made the decision to be a part of the growing conversation about environmental sustainability. In addition, we have completed a Life Cycle Analysis of our plumbing products, and we are near completion of such an analysis for our waterworks products. These tools will help us identify the opportunities to reduce the impacts of our operations on the environment; an effort that is consistent with the fact that our products, made from almost 100-percent recycled material, offer significant environmental benefits.

The Results

The changes to McWane's culture and our EHS programs could not have occurred without the financial resources to support them. Since 1999, McWane has invested substantially more than \$300 million in capital improvements and operations related to environmental compliance, workplace health and safety, and human resources. In addition to the systems and programs described above, these

expenditures include projects such as state-of-the-art pollution control systems that enabled us to achieve compliance with the EPA's Maximum Achievable Control Technology (MACT) requirements years before required by regulation and interlocked guarding which totally encloses conveyor systems.

Injury Rates

The positive impact of these programs and efforts are reflected in the downward trends in all injury categories: Total Recordable Injury/Illness Rate (TRIR); Days Away From Work (DAFW); Days Away, Restricted, or Transferred (DART); and Severity Rate. For our U.S. facilities, since 2002 there has been a 63 percent improvement in the TRIR, a 64 percent improvement the DART rate, and a 62 percent improvement in the DAFW Rate and a 85 percent improvement in Severity rate. Additionally, at the end of 2009, our foundry averages were 51 percent below the industry average for TRIR, 53 percent below for DART, and 63 percent below for DAFW.

These trends are positive but our rates remain higher than our goal of zero injuries. We are personally committed to reducing them even further and more rapidly, and we are confident that as our programs become more ingrained the decline will accelerate. We continue to invest in training to support continual improvement of safety performance, knowing that establishing cultural norms is an ongoing process.

Safety Recognitions and Awards

McWane is working towards having all of its facilities qualify for OSHA's Voluntary Protection Program (VPP), which officially recognizes the outstanding efforts of employers and employees who have achieved exemplary occupational health and safety programs. Seven of McWane sites have already achieved VPP honors with several more anticipating applications within a year.

In 2009 the National Ergo Cup was awarded to our Clow Valve facility at the Applied Ergonomics Conference. Over 35 companies including Boeing Company, Honda, Johnson & Johnson, General Electric, and Bridgestone/Firestone competed at the conference. This award was given for outstanding achievement in reducing ergonomic issues through engineering solutions.

Several of our facilities have reached the million man-hour mark without a lost time injury, and multiple facilities have received recognition from their municipalities or Chambers of Commerce for superior safety achievements.

Summary

EHS is a shared responsibility at McWane. It requires cooperation with co-workers, plant management and corporate personnel in order for us to be successful. While we are not proud of the mistakes we have made in the past, we are proud of our heritage of hard working employees who for almost 90 years have provided products vital to the delivery of water and other services to our neighbors across the nation and the world and of the successes they have achieved. We know that our progress is a process and that no matter what improvements we have made, we operate under the principles of our EHS policy of compliance, protection, and continuous improvement. In that vein, we will never be satisfied with our results, knowing that we can always be one step better tomorrow than we are today. That is 'The McWane Way.'

In the words of our founder, J.R. McWane, who said in 1921, "Progress can only be done when the rank and file of the workmen believe in management and are willing to take hold of whatever is

proposed and put it over. With such a force it is possible for things to be better today than yesterday and better tomorrow than today, for each day to mark some distinct progress, and everybody to feel that we did it.”