

Pyramid Builders at ArcelorMittal Dofasco

Hazards are ever-present in the steel plant environment, and a heightened awareness and emphasis on safety is a necessary priority for our industry. This monthly column, coordinated by members of the AIST Safety & Health Technology Committee, focuses on procedures and practices to promote a safe working environment for everyone.

Authors

Jim Murray
general manager, health, safety and loss prevention, ArcelorMittal Dofasco G.P., Hamilton, Ont., Canada

Laurie Haggstrom
manager, health and safety, ArcelorMittal Dofasco G.P., Hamilton, Ont., Canada

This paper is the recipient of the 2019 AIST Safety & Health Innovation Award. For more information about AIST awards, visit AIST.org.

At ArcelorMittal Dofasco, an innovative approach to health and safety was adopted through utilization of the traditional Accident Pyramid.

The Accident Pyramid represents a mathematical formula that indicates for every one fatality there are 30 serious injuries, 300 minor injuries, 3,000 accidents without injury and 30,000 unidentified hazards. It relies on the premise that the more information collected and the more known hazards, the more effectively safety can be managed.

Pyramid Builders furthers the base of the pyramid to include unsafe conditions and behaviors as a component of ArcelorMittal Dofasco's in-house-developed "Stop.Challenge.Choose." which engages employees to "Stop" to recognize hazards, "Challenge" unacceptable risk and "Choose" the safest way to proceed. ArcelorMittal Dofasco's World Class Continuous Improvement (WCCI) mindset was applied and the new "Pyramid Builders" problem-solving approach was developed by a team of employees dedicated to improving the company's approach to unsafe conditions and behaviors.

Stop.Challenge.Choose.

Stop.Challenge.Choose. is a mindset that's taking hold across the company and helping to eliminate risk. Every day, this simple approach has helped individuals be safer at work and at home.

A key element of Stop.Challenge.Choose., Pyramid Builders drives the prevention of accidents and

injuries by engaging teams to identify unsafe conditions and unsafe behaviors. These unsafe conditions and behaviors are addressed by team members who identify and correct where possible and then document these concerns. By engaging a team of frontline employees in the development of the Pyramid Builders "route," an in-house-developed, team-based problem-solving methodology is utilized to help eliminate unsafe conditions and behaviors. To date, 41 Pyramid Builder teams have been implemented to address health and safety concerns.

Implementation

ArcelorMittal Dofasco's Pyramid Builders route leads small, work area-based teams through a structured journey from problem to solution, by observing conditions and behaviors, correcting these situations, and documenting the results as shown in Fig. 1.

Health and safety issues are identified by local areas and small, focused teams are created to use the Pyramid Builder route to address the issues. Teams include frontline operators, maintenance and technology personnel who work together to address and solve concerns.

Pyramid Builders teams engage their colleagues to observe unsafe behaviors and conditions, correct the situations and document these issues using a "tagging" process.

Each Pyramid Builders team is trained on the methodology and then systematically applies their training to understand and address

Comments are welcome.

If you have questions about this topic or other safety issues, please contact safetyfirst@aist.org.

Please include your full name, company name, mailing address and email in all correspondence.

Figure 1



How the Pyramid Builders system works at ArcelorMittal Dofasco.

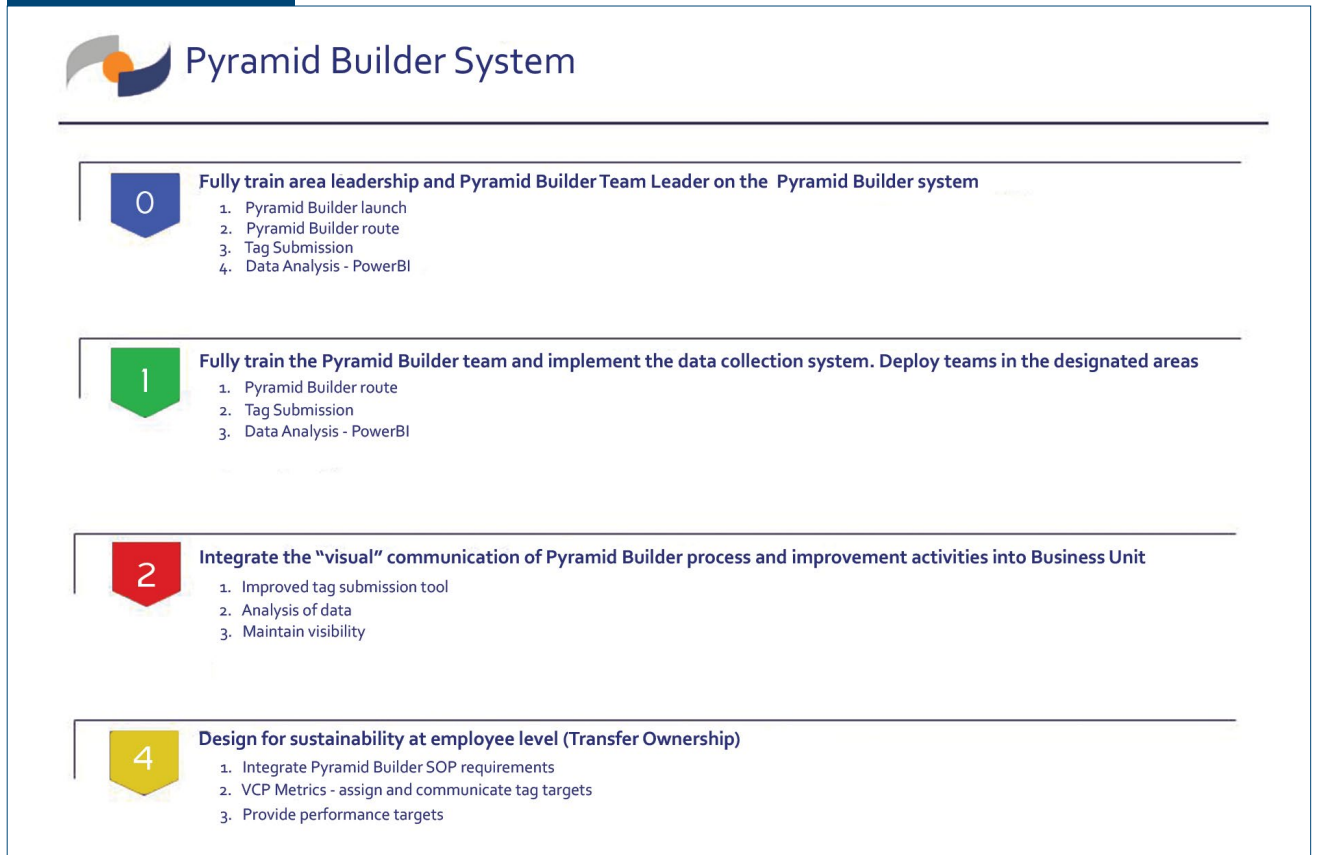
local health and safety issues. “Team boards” are project boards on display in the team’s work area that allow the team to document their project progress and share their work and findings with their colleagues and supervisors.

Impact on Safety and People

The implementation of ArcelorMittal Dofasco’s Pyramid Builders methodology to eliminate unsafe conditions and behaviors has proven to be extremely effective and impactful. It is easy to adopt and the step-by-step approach (Fig. 2) has been readily employed with exceptional health and safety improvement outcomes.

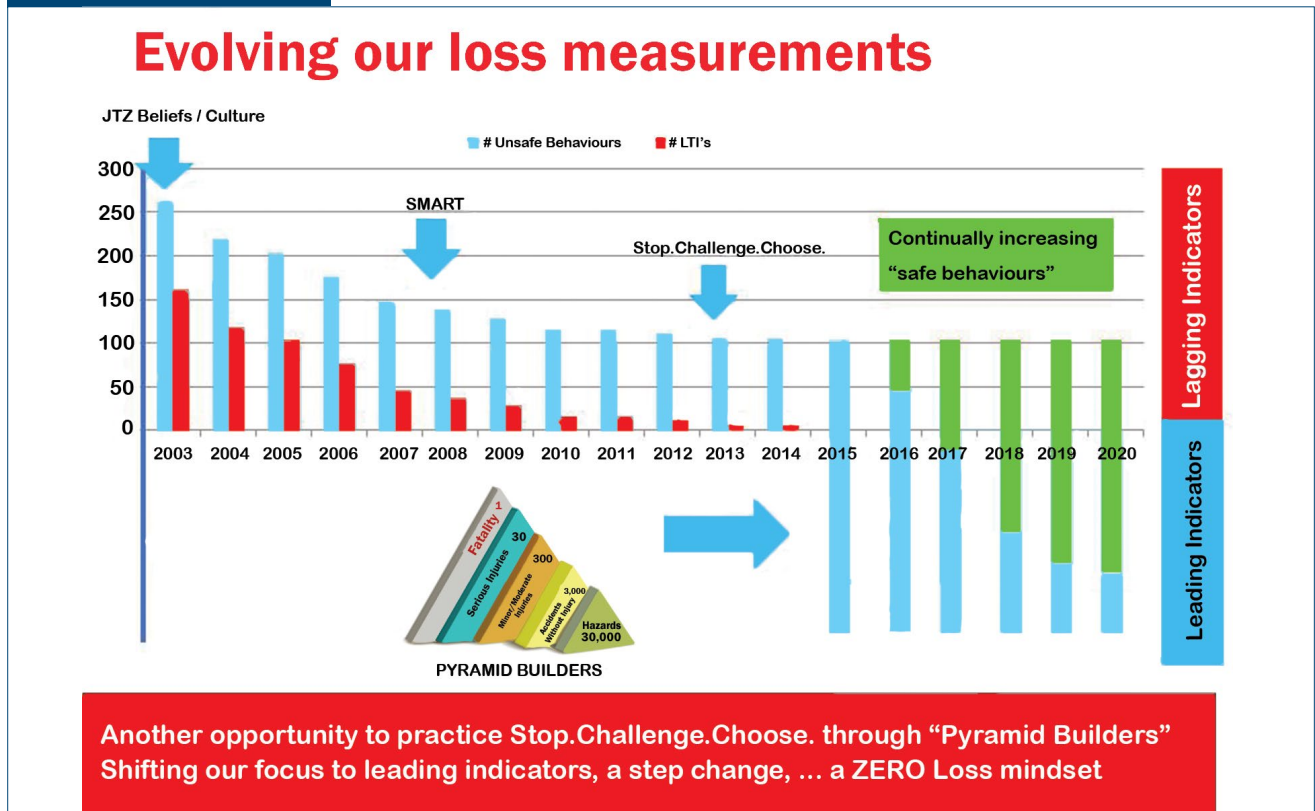
The success realized at ArcelorMittal Dofasco and the enthusiasm of the employees for the process is an endorsement of the approach. Team-based solutions are designed by the local area employees and the solutions are implemented and communication is led by these individuals as well. Solutions are readily accepted by the team’s peers and the whole work area is able to own the solution and ensure sustainability.

Figure 2



Steps of the Pyramid Builders system.

Figure 3



Evaluation of Stop.Challenge.Choose. and Pyramid Builders at ArcelorMittal Dofasco.

Improvements Attained

The ArcelorMittal Dofasco journey has seen a transition from a traditional lagging indicator-based system to a new system that focuses on developing and monitoring leading indicators, specifically behaviors and conditions. Through Dofasco's health and safety journey, ArcelorMittal Dofasco has seen a dramatic decrease in lost time injury (LTI) metrics — and has experienced a >90% improvement from 1997 to current levels.

The systematic approach with a vision of “zero accidents, injuries and illnesses” has focused the entire organization on a WCCI approach to health and safety. Since the inception of the Pyramid Builders

improvement process route, more than 40 teams have been launched in both manufacturing and non-manufacturing areas.

In 2018, the teams identified more than 30,000 unsafe behaviors and conditions. One of the key measurements of success of Pyramid Builders is how many unsafe behaviors and conditions have an immediate corrective action taken by the observer — this is a key strategy for the Pyramid Builders to address unsafe behaviors and conditions when observed for maximum impact. For 2018, on average, 60% of unsafe conditions and behaviors were immediately addressed. The impressive results inspire new teams to form and implement Pyramid Builders across the plant. ♦