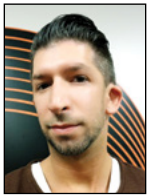


Hazards are ever-present in the steel plant environment, and a heightened awareness and emphasis on safety is a necessary priority for our industry. This monthly column, coordinated by members of the AIST Safety & Health Technology Committee, focuses on procedures and practices to promote a safe working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



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## Improvements in Plant Safety at Charter Steel – Cleveland

Imagine a thriving department within your company that has been exceeding expectations on production, new customer trials, quality, yields, efficiencies, reduced maintenance downtime and cost savings several times this year. An important question to ask yourself is, “Did we do so while hitting our safety expectations?” If you look back and realize that you did such accomplishments at the expense of safety, could you live with that?

We want everyone to finish their work in the same condition they started. Impeccable safety is something we owe to ourselves, our families and our co-workers. This thinking initiated the Charter Steel – Cleveland meltshop to push for changes in expectations and the behavior behind how employees function in these environments.

This article details the key safety initiative Charter Steel – Cleveland undertook to transform safety outcomes. These keys include goal commitment, tools and training, aligned program improvements/additions, and a process to sustain successes.

### Commit to Safety

To meet such a demand in safety, Charter Steel – Cleveland first had to level set our understanding of safety performance and acknowledge that improvement was necessary. The meltshop was heading for the worst department record for safety in 2015 going into 2016. The plant management team got all the employees together to share the concept of a personal commitment to safety by having everyone sign a Commitment Board, which was posted in a location where employees could see it. There began a

healthy open dialog for all parties to share what it takes to meet safety goals. Charter brainstormed issues and came up with collaborative suggestions and solutions. This process allowed for a higher level of operator input, more precise incident reporting, increased levels of safety audits and more interaction with safety teams. It also led directly to more training in safety behavior. This collective effort to make a change was without force but with desire.

### I-CARE Does Care

Part of getting better at safety is acknowledging problems that could or did occur, and then appointing a clear task to an empowered employee to ensure the task gets done and doesn't happen again. One can learn much about a process by documenting the truth about the activities that are going on. This makes it all the easier to improve and prevent safety issues by finding the root cause while eliminating the stigma that reporting is for disciplinary reasons. This creates buy-in from the employees and enhances team morale. When employees feel that the company really cares about them, they feel more comfortable telling what really happened, and less likely to shy away from the truth.

These principles initiated the creation of a Cause Analysis Team at Charter Steel – Cleveland with specific focus on improving the current safety issue reporting process. The solution included the use of a custom-built software application called Incident and Corrective Action Reporting Excellence (I-CARE). This tool is a tremendous aid to enhance how Charter discusses important safety topics

Comments are welcome.

If you have questions about this topic or other safety issues, please contact [safetyfirst@aist.org](mailto:safetyfirst@aist.org).

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

and assigns action items to take care of the issues as well as tracking the data. The team was able to use some of the data to narrow in on “low-hanging fruit.” For example, in order to improve the likelihood of hiring safety-minded employees, Charter chose to work on enhancing the hourly recruiting process to improve screening, interviewing, hiring decision, onboarding and 90-day performance follow-up practices. Additionally, I-CARE reports have become the first agenda item in any morning production meeting.

One person is scheduled to give a Morning Safety Topic for each day. The best way to really grasp the reality of safety is to witness it firsthand. However, since a company does not want to have accidents just for the sake of learning, the next best thing is let others share safety-related life experiences.

### External Training Looks Internally

Charter has always promoted the idea of continuous improvement through continued learning. The adherence to this core value makes it easy to lead all 500 employees at the Cleveland facility to make a commitment to change. The quality/technical manager and continuous improvement leader led the charge to find a company, FDRSAFETY, to deliver safety training. A key principle that was driven home during these sessions was the large difference between “having to” work safely versus “wanting to” work safely.

As part of the training, Charter surveyed the employees to see how they responded to the training and if it would be a positive impact. Not only did it positively impact the employees, it helped them view their safety behavior outside of work as well. As one employee put it, “They need to give this training to all manufacturers.” This training helped solidify the importance of safety as a core value.

Through participation in this training, the plant leadership team solidified their focus on continuously reporting and addressing small safety events in order to prevent bigger ones. One practice to support this value is to hold weekly meetings to review all reports. Additionally, Charter performs detailed reviews of the down-day tasks to identify any safety concerns before maintenance even starts the tasks.

### Well FPR to You Too!

Some of how a company perceives itself has to also come from what’s going on in the industry as well. Does what we face today match up to the industry or is it better? What about the worst-case scenarios? To do this, one should ask, “What are the Fatality Prevention Responsibilities (FPR) we should be focusing on?” In order to prioritize efforts, Charter analyzed both

internal metrics as well as standard industry reports in order to identify the most significant tasks that could result in fatalities.

From this analysis it became clear the “mobile equipment” category presents a large fatality risk in the steel industry. To address this gap, Charter has leveraged a cross-functional team to lead the analysis and improvements. The Mobile Equipment and Pedestrian Interaction Team (MEPIT) focused on some key issues regarding mobile equipment safety and pedestrian traffic that include some of the following:

- Improved equipment ID.
- Updated vehicle inspection reports.
- Installed safety rails.
- Perfected signs.
- Upgraded egresses.
- Installed gates.
- Added pedestrian walkways/lighting.
- Enhanced site traffic flow.

A key takeaway for this team was to increase the focus on near-miss reports and suggest improvements before the accidents occur. The MEPIT team is in place and will be an ongoing support to the safety initiative.

A second area of focus from the FPR initiative was fall protection. All members from the maintenance crew participated in extensive fall protection training and were refitted and given a location for their fall protection equipment. The team developed an audit program that inspects all fall protection gear before each use.

The additional area of focus was lockout/tagout and confined spaces. Several more teams were formed to enhance lockout/tagout practices in multiple areas of the shop. Improvements included updated procedures and increased standardization, which included the use of safety videos for contractors and visitors. This has helped reduce the risks of errors and improve communication on the status of lockout/tagout for anyone working on-site.

### Results

The Charter Steel – Cleveland meltshop has shown significant improvements in its lagging safety indicators over a recent 12-month span.

### Sustain the Gains

Charter has developed a variety of solutions to help sustain its safety initiatives. Plant leaders and support functions have been given a monthly score card/audit

program to monitor safety. Examples of what is measured monthly in the safety score card are:

- Delivered safety topic training (Y or N).
- Performed Safety Training Observation Program (STOP) audits and risk audits (Y or N).
- Performed Take 2s (i.e., taking two minutes to think about a task before starting it to assess potential safety risks)(Count).
- Visited a safety team (Y or N).
- Kept current on safety foundations (Y or N).

All of this is monitored and kept at 100% completion every month.

In addition to I-CARE, Charter's sustain programs and weekly safety meetings, the facility has also implemented a pilot program for a new role called the "safety advocate." The safety advocate is a full-time employee dedicated to all areas of shop safety, aligned to help lead and advocate for improved safety culture. The first person in this role was refractory supervisor Dan Schumacher, who has stepped out of his current role for a period of nine months and reports to the plant manager. As he put it, "I'm glad to be able to use my experiences in a different way and share safety issues with operations from this viewpoint." The safety advocate has also acted as an extension of the safety, continuous improvement and human resources departments. Some of the roles and responsibilities are:

- Increase awareness about the importance of work health and safety.
- Highlight the personal impacts that an injury can have on workers and their families.
- Prompt discussion about work health and safety.
- Encourage the team to develop work health and safety solutions together.
- Speak to teammates about the importance of safety in the workplace.
- Conduct periodic safety and health walk-through inspections of all workplace facilities.

After nine months this person returns to their prior role, allowing them to share their new safety skills to lead and inspire others to take safety culture and performance to the next level.

### Beyond Steel

Through the changes outlined in this article, the employees at Charter Steel – Cleveland meltshop have shown a deeper passion about their own safety and others. With the empowerment coming down from all levels within the organization, Charter Steel will continuously strive to improve in safety for years to come. ♦

### Did You Know?

#### AIME Releases Report on Council of Excellence Innovation Efforts

The American Institute of Mining, Metallurgical, and Petroleum Engineers (AIME) has released a report, "In Pursuit of Technological Innovation," which outlines the goals and initial analysis of the AIME Council of Excellence, established in 2014 by Behrooz Fattahi, the AIME president at the time. The report is available for free download at the AIME website at [www.aimehq.org/programs/collaborative-efforts/council-of-excellence/article-1](http://www.aimehq.org/programs/collaborative-efforts/council-of-excellence/article-1).

The mission of the AIME Council of Excellence is to convene highly regarded technical experts representing the AIME member societies to continuously identify technologies (mature and/or leading-edge) that might have innovative application within the industries served by these societies. These member societies include AIST, Society for Mining, Metallurgy, and Exploration (SME), Society of Petroleum Engineers (SPE), and The Minerals, Metals and Materials Society (TMS). Theodore F. Lyon, managing director of Hatch Associates, and Kevin L. Zeik, senior research fellow — Advanced Materials and Manufacture of U. S. Steel Research and Technology Center, are the current AIST representatives to the Council of Excellence and served as co-authors of the report.

"The industries served by our member societies represent many different technical disciplines and use highly sophisticated technologies in their operations," said Fattahi, who currently chairs the Council of Excellence. "These technologies have been important enablers in their continuing drive to improve how they solve problems and deliver products and services to consumers. This makes timely development and rapid application of leading-edge technologies critical for their survival and prosperity."

Fattahi, a past president of SPE, then cited examples from the petroleum industry to illustrate the cross-disciplinary application of these technologies that the Council of Excellence intends to explore. These include the use of jet engines (turbines) in the generation of steam (cogeneration) for recovery of heavy oils; utilization of satellite photos for ground subsidence monitoring, deployment of sophisticated monitoring and communication electronic devices in the operation of "smart fields;" and use of medical computerized tomography scans to understand fluid dynamics in rock.

"The big idea of the Council of Excellence is to link more people so that each association can help and benefit from the experience of those who have solved similar problems — but in a different field," said Fattahi. "By expanding the technology toolbox that we all have available, we will all be able to work smarter and make smarter use of the earth's resources."

In addition, the AIME Council of Excellence is inviting members of the AIME member societies to submit ideas via a form available at [www.aimehq.org/programs/collaborative-efforts/council-of-excellence](http://www.aimehq.org/programs/collaborative-efforts/council-of-excellence). Noted Fattahi, "Participation is essential in creating and expanding a network of innovative engineers and scientists to synergize their minds and knowledge to accelerate new technology development and identify new and innovative application of aging or cross-industry technologies."