

Safety System Development — Scrap Pre-Heat

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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Charter Steel successfully implemented a safety system in conjunction with a large scrap pre-heat (SPH) capital project at its Saukville, Wis., USA, melt plant. At the early stages of this project, the Charter Steel leadership team had a vision that was vital to the overall success: everyone working together every day to achieve an injury-free workplace. Before final drawings were approved, prior to any construction and long before arcing the first heat, the definition of project success included the integration of safety into all aspects and stages of the project, capitalizing on safety leadership and cultivating employee engagement.

Safety Integration

To lay the foundation, a Safety Steering Team was formed during the initial stage of project planning. The team consisted of operations leaders, project managers, continuous improvement representatives and safety professionals. The goal was to have zero injuries and no serious injuries/fatalities (SIF) events, from design phase to commissioning.

The team's agenda focused on prevention through design, contractor management and safety system development. Prevention through design focused on controlling SPH exposures before the construction phase. The team reviewed drawings, plans and layouts to identify exposures.

An example of this was when the project plan called for the installation of a 30-foot fixed ladder to access peak shaver equipment. The team successfully made a business case for substituting stairs for the fixed ladder, significantly

reducing exposure to employees and contractors.

Safety Steering Team members managed contractors through a pre-qualification process, developing a specific site safety plan and partnering with contractors to control exposures and execute the site safety plan.

Safety system development included a comprehensive assessment of how SPH impacted the current safety system and the development of necessary risk assessments, safety procedures and controls. The Safety Steering Team clarified the safety system development scope by listing equipment and areas impacted by SPH. In total, the team identified 18 pieces of equipment and areas (e.g., cranes, conveyors, etc.).

To develop a fully integrated safety system by start-up, the Safety Steering Team committed the resources of 18 employees in the meltshop to lead the development of safety systems for each SPH piece of equipment and/or area. The individuals were selected based on their experience and area of responsibility and were called the Safety Leadership Team.

Safety Leadership

In early 2018, the Safety Leadership Team was formed. The Safety Steering Team was responsible for leading the Safety Leadership Team by providing clear expectations, resources, documentation, timelines, mentors, and necessary technical training and support. The roles were as follows:

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- The plant manager set the stage by sharing his vision of having a better safety system by the end of commissioning.
- The safety engineer presented how each leader could access their assigned electronic folder containing drawings related to their equipment/area, necessary safety documents (e.g., risk assessment form, confined space assessment, lockout-tagout procedure template, etc.) and a report-out template highlighting project expectations.
- The operations project engineer reviewed the timeline of implementation.
- The senior continuous improvement leader facilitated a discussion on what additional resources and training were needed in order to be successful.

To ensure consistency and alignment and share status updates, the Safety Leadership Team met monthly.

Employee Engagement

The Safety Leadership Team regularly shared their vision of everyone working together every day to achieve an injury-free workplace by engaging


employees through formal and informal teams. They attended team meetings — scrap yard team, crane team, safety team, etc. — and engaged employees on the production floor to identify risk, discuss controls and develop safety documentation.

Two maintenance technicians were assigned early in the project to be dedicated project resources. The technicians were a critical part of the successful development of lockout-tagout procedures, confined space assessments and exposure reductions.

Results

During summer 2019, Charter Steel – Saukville melt arced the first scrap pre-heat heat. More than half of the Saukville melt team actively participated through design, contractor management and safety system development.

At the end of the day, the project was a success. The team created, documented and implemented 135 safety procedures resulting in 125,000 construction hours worked without a lost-time injury and only one recordable injury. ♦



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