worldsteel
ASSOCIATION

SAFETY AND HEALTH

Excellence Recognition Programme 2010

The importance of leadership for zero harm

For organisations to make a significant and long-lasting impact on safety and health, its leaders must take an ongoing, strong and visible leadership role.

The safety and health principles endorsed by the leaders of worldsteel member companies are a key element of any safety programme. The implementation of these will only be effective with the sustained effort and commitment of a company's leadership, including the management teams on our sites.

This year, as in the two previous years, submissions for the worldsteel safety and health excellence recognition programme showed how direct leadership prevented injuries for each of the implemented initiatives.

The discipline required in setting – and applying – the standard is critical. This needs the leaders to be active in its promotion and to "walk the talk" on safety at every opportunity, especially when visiting a site. This is a beneficial activity for everyone involved: for the CEO to learn what is occurring on the shop floor, and for employees to recognise the leaders' involvement.

The safety and health excellence recognition programme was launched in 2008, with five companies being recognised at the worldsteel annual conference. At the conference in 2009, three companies received recognition for their outstanding work.

In 2010, worldsteel again called on its members to submit descriptions of initiatives they have developed for this prestigious programme. worldsteel received 21 submissions for consideration. They cover a wide range of activities, all of great merit as they have been successfully introduced into the workplace and had a clear impact on the company's safety statistics. Impact on metrics was one of the selection criteria for the recognition programme.

The selection process presented a dilemma on how many initiatives to recognise. Last year, three companies were selected. This year, while carefully reviewing the 21 submissions, the judging panel found two to be very close.

As the purpose of the health and safety excellence recognition programme is to show improvements and share initiatives that others can benefit from, we decided to recognise four companies this year.

From the worldsteel General Manager for Safety, Technology and Environment

The renewed commitment from worldsteel member companies to their goal of an injury, illness-free and healthy workplace is encouraging. Participation in worldsteel's safety and health work saw significant growth this year. This was partly due to a renewed effort from the membership to engage with the work of the association on safety and health. This shows a tremendous and sustained commitment from our industry's leaders.

Every injury is preventable. With this in mind, the work to implement the six safety and health principles (shown on the back of this brochure) must never stop. With leadership and persistance, the goal of zero harm is possible.

The companies recognised this year and in previous years have seen the results of their innovative and important work: a drastic reduction in injuries. Some plants have demonstrated that it is possible to achieve years of zero lost-time injuries.

The survey response for this year (2009 data) has improved significantly from 40 to 70 organisations, and includes some non-member companies. This still leaves room for the remaining steel-producing members to start on the journey of sharing and learning from each others' experience. Together, our efforts will make a drastic impact on reducing injuries.

Nothing is more important than the safety and health of people who work in the iron and steel industry.

Henk Reimink
General Manager
Safety, Technology and Environment

UNITED STATES STEEL CORPORATION

Customised flame retardant fabric

Handling molten metal is part of primary operations throughout U.S. Steel. Therefore, molten metal splash is a significant potential burn hazard.

Rather than accept recommendations of fabric and clothing manufacturers, Research and Safety at U.S. Steel work together to test various fabrics and combinations of fabric layers to ensure employees are provided Personal Protective Equipment (PPE) that will prevent injury.

Pour tests were conducted in a laboratory environment that allowed conditions to be controlled and monitored, rather than on the blast furnace cast house floor, for example. This allowed for much more thorough correlation of data and decision-making.

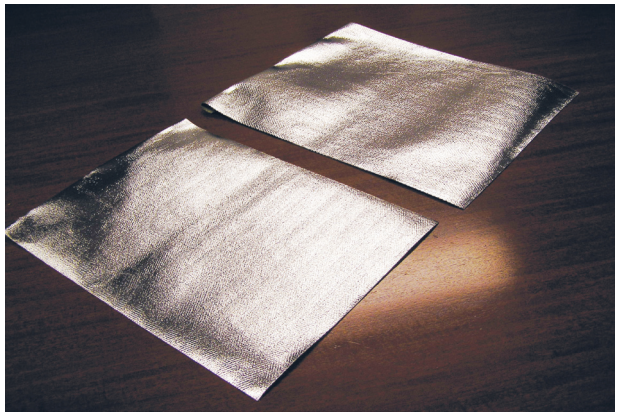
For test purposes the fabric was constructed in layers. The exterior layer was aluminised material that protects against molten metal burn-through and provides for shedding of molten metal. The secondary layer was a carbon Kevlar material and offers additional burn-through protection as well as heat protection. The final layer of the test sample was a skin simulator. Its purpose was to identify if a person would receive a burn from the molten metal contact, from fabric burn-through and/or from thermal conductivity.

In the tests, five pounds (2.3 kg) of molten metal was poured onto the fabric sample of the flame retardant 'clothing'. The samples were visually evaluated and the temperature data was assessed. The visual analysis and temperature data showed that the composite material described above proved to be the most effective. The skin simulator was not damaged.

Through this procedure of flame retardant fabric testing, and in combination with operating standard practices, work practice controls and proper tools, the enhanced PPE reduces injury potential from molten metal splash. From a shop floor standpoint, an aluminised coat worn over a fire retardant jacket with a cotton undershirt would prevent a burn.

Employees were involved in the design and construction of the PPE. They also conducted workplace testing of the products that had passed the pour testing procedure. Since the new clothing has been put into place, U.S. Steel has not had one employee sustain an injury that is serious enough to require medical treatment over the last two years.

This safety practice has helped to create PPE that will better protect employees. The fabric can be used in all molten metal applications where burn injuries are a potential. It ensures, when used properly, that it will protect the employee from molten metal splash.



BLUESCOPE STEEL

Coil loading and unloading

BlueScope Steel's Western Sydney Service Centre (WSSC) was constructed six years ago. It is a coil painting facility with 80 employees.

The team at WSSC developed a safe practice for the loading and unloading of trucks at the facility. For truck loading, nine simple steps cover the truck from the time it enters the site until it exits, with a secured load of coils on its trailer:

1. truck enters site
2. driver is inducted
3. truck waits for permission
4. truck enters coil loading bay
5. driver enters Driver Safe Zone
6. crane loads truck
7. driver uses platform to restrain coil
8. load restraint audit conducted
9. truck exits site to make delivery to customer.

This nine-step procedure was created in consultation with truck drivers, despatch and warehouse personnel and experts from other BlueScope departments.

To prevent potential injuries, past incidents and near misses were reviewed, and a risk assessment was conducted. A prime example of an innovation in safety at WSSC is a moveable platform for loading coils onto the trailer.

The platform is moved into position beside and level with the trailer. Its wheels are lockable, so the platform does not move while in use. The truck driver accesses the trailer using the platform's ladder. The platform is also a falls prevention device through the use of a lanyard and a harness for the truck driver.

Drivers who arrive on site without the correct load restraint equipment are refused loading. WSSC has assisted contractors by supplying equipment when drivers were not properly equipped initially.

This solution has been adopted by other BlueScope sites and external customers. At WSSC, the loading practices have resulted in faster loading times of trucks, a friendlier working environment and better working relationships with drivers.

Since the plant was built, WSSC has experienced no fatalities, lost-time injuries, medically-treated injuries or injuries relating to coil handling, loading and transport.

Six incidents have been raised relating to coil handling and transport audits, with 14 corrective actions raised and completed.

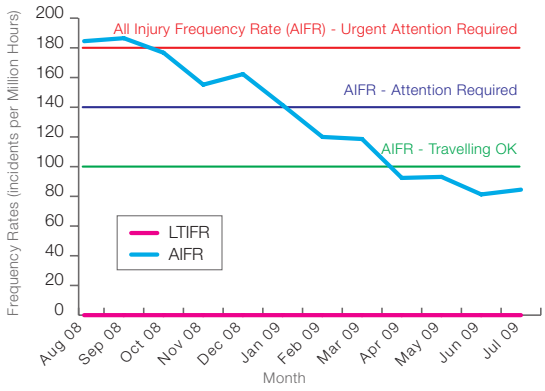
- 100% load restraint audits have been conducted on all coils dispatched from WSSC
- 100+ focussed audits have been conducted on coil handling and transport
- there have been 200+ safe act observations on coil handling and transport.

BlueScope believes in zero harm. Safety and health is integrated into all of BlueScope's business management processes. One example is how changes to pre-existing practices are managed, using the organisation's change management process. Team members are consulted on all proposed changes. The changes are reviewed by a panel, implemented and reviewed again.

Changes to safety practices involve updating training documentation, standard operational procedures, inductions, audit sheets, knowledge manuals and other materials. All employees' training needs and records are mapped out using an electronic learning and development management database.

On average, the WSSC has achieved 99.5% delivery performance for the first three years of its operations. This is a leading statistic in BlueScope Steel. The practice of loading and unloading coils in a safe and timely manner greatly contributed to this record.

Injury frequency rates



POSCO declared 2009 a turning point for safety. To support its main objectives and ensure the compliance with them, the Corporate Safety Department was launched. Its job was to review safety activities and processes.

The department identified the key factors to achieve a safety culture: leadership, systems, technology and infrastructure. The company then implemented a wide range of programmes and initiatives, as outlined below.

POSCO adopted the safe acts observation (SAO) initiative, which promotes dialogue with employees, encouraging them to bring about a fundamental change in behaviour. To implement SAO, POSCO provided training specialists, conducted SAO assessments and held regular SAO contests.

SAO consists of five steps: Determine, Stop, Observe, Discuss and Record and Feedback on fundamental principles. All managers are expected to conduct SAO regularly, once or twice a week depending on the level of the manager.

Leaders also perform safety audits. Knowing that "the standard you walk past is the standard you have just set", leaders set clear, consistent standards and expectations all the time, with no exceptions. Applying the principle of 'felt leadership, managers go out and demonstrate the standards that they want to see practised across the company.

A Corporate Safety Committee, chaired by the Chief Operating Officer (COO), was formed to oversee safety of POSCO employees and contractors. In quarterly meetings, the executives, COO, and CEOs of contractors review the 'PCDA Cycle of Safety'. This stands for: Plan, Do, Check, Act.

POSCO operates a Safety Experience Centre. It is equipped with 11 simulation and exhibition rooms, providing opportunities to experience risk scenarios under actual working conditions. Coupled with such follow-up measures as first aid to the injured, it is an effective way to enhance safety awareness among workers. The centre also trains employees as safety instructors. In 2009, 9,885 people were trained there: 7,597 from POSCO, 1,321 contractors and 967 visitors.

Another innovation is the e-Safety system. Every employee of POSCO is issued with a smart phone. Using this device, employees can check and assess major facilities and equipment and quickly identify and eliminate hazards or risks (see photo below).

The system allows browsing and analysis of safety and health information and technical data, and turns them into educational material.

Other noteworthy initiatives include:

- POSCO's isolation locking system, or ILS, ensures safety in the event of human error or equipment malfunction.
- The Safety Masters Programme, a six-month training course for safety experts. It consists of beginner's course, a specialised course and an expert course. The 130 safety experts trained during 2009 are currently in charge of safety in their divisions and departments.
- The POSCO Safety Rating System to assess leadership, organisation and implementation. When the POSCO safety assessment tool identifies an area that needs improvement, the assessment results are published and a solution must be presented. Six months after the first assessment, a second assessment is conducted. The Corporate Safety Department conducts assessments with more than four departments or contractors a month.

TATA STEEL

Working in confined spaces

Tata Steel's Jamshedpur Works, India, is increasing its capacity from 5 million to 10 million tonnes. Working in confined spaces was one of the companies main concerns.

Tata Steel took the concern as a challenge. First of all, a survey was done across the company and a unique identification number allotted to each area designated as a confined space. In each case, an entry point was designated and the layout of the space, along with a rescue plan, was established. A standard operating procedure was developed and a process of validation set up using a job cycle check.

An external expert agency prepared a rescue plan and was tasked with installing the rescue mechanism at each site.

The roles of key personnel such as the Entry Supervisor, Attendant (Contractor's Supervisor), Safety Watcher, Safety Associate and Safety Officer were defined and communicated.

An area owner must complete a risk analysis.
The person prepares the job in a confined space in accordance with the procedure and ensures that rescue mechanisms such as the permissible gas limit and oxygen percentage are in place. Then a qualified 'competent person' is called in.

Tata Steel has developed 23 competent persons to validate the 726 jobs identified as confined space jobs. A competent person visits the site, reassesses the risk and validates the findings.

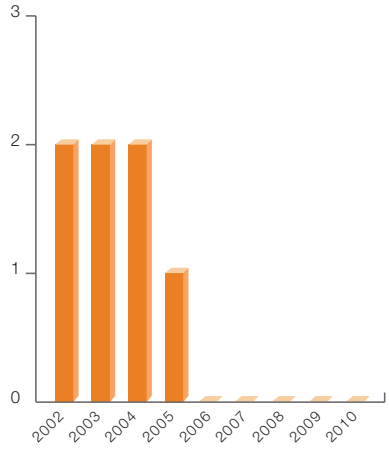
The risks are assessed using the DuPont methodology. Oxygen percentage is checked by the supervisor, the data is maintained in a register, and risk is assessed every half an hour.

Safety officers, along with line managers, carry out safety audits at regular intervals. If they see a risk of death and serious injury, they are authorised to stop the job. Severity is measured on a scale of one to five, with one being a minor injury and five being a potential fatality.

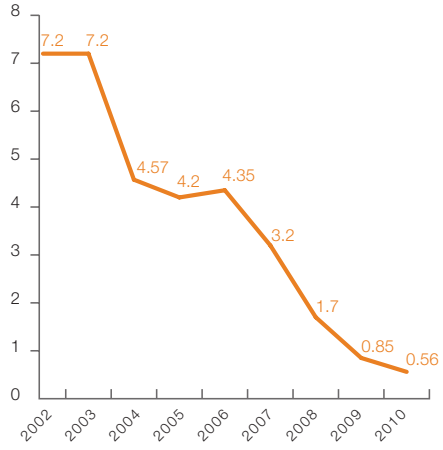
Gas leaks create oxygen deficiency in the atmosphere, so complete isolation of all energy and gas sources is mandatory at Tata Steel. Working safely is a condition of employment. This is addressed during contract preparation and new employment.

Compliance with the procedure for working in confined spaces has been declared a 'life-saving rule' in Tata Steel. All employees working in confined spaces receive a health check. There is also a reward and recognition system for contract partners who consistently do a safe job. With these initiatives our safety performance in this area has improved.

Fatalities due to asphyxiation in confined spaces



Lost time injury frequency rate of Tata Steel



worldsteel
ASSOCIATION

NOTHING IS MORE IMPORTANT THAN THE SAFETY AND HEALTH OF THE PEOPLE WHO WORK IN THE STEEL INDUSTRY.

Our safety and health principles

1. All injuries and work-related illness can and must be prevented.
2. Management is responsible and accountable for safety and health performance.
3. Employee engagement and training is essential.
4. Working safely is a condition of employment.
5. Excellence in safety and health supports excellent business results.
6. Safety and health must be integrated in all business management processes.

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