Safety and Health Excellence Recognition 2023

A showcase of excellence in safety and health management practices from around the world
The World Steel Association (worldsteel) is one of the largest and most dynamic industry associations in the world, with members in every major steel-producing country. worldsteel represents steel producers, national and regional steel industry associations, and steel research institutes. Members represent around 85% of global steel production.

More details on the recognitions included in this publication and the submissions received for the 2023 Safety and Health Excellence Recognition Programme are available on the worldsteel extranet.
Foreword

I am proud to recognise the commitment and effort of our members towards the wellbeing of their workforce and contractor community.

Within these pages, you will discover practices that redefine safety and health within the steel industry, leaders and organisations that have gone above and beyond.

As you explore this brochure, you will witness the innovation and dedication that drives steelmakers to redefine safety and health standards. The stories shared here are more than just examples; they highlight the remarkable progress made in safeguarding lives and promoting and preserving health. This has been achieved through transformational leadership, understanding how people really behave and a focus on minimising and eliminating risk.

Join us in celebrating the outstanding efforts of our worldsteel members as they redefine excellence in the steel industry.

Andrew Purvis
Director, Sustainable Manufacturing
World Steel Association

Four categories and six recognised companies:

- Safety culture and leadership
  - BlueScope
  - Liberty

- Occupational safety management
  - Acerinox
  - JFE

- Occupational health management
  - Tenaris

- Process safety management
  - Tata Steel
Safety and Health Excellence Recognition 2023

Over 700 critical-risk inspections were conducted to verify the effectiveness of critical controls since 2021.

Improvement in total recordable injury frequency rate (TRIFR) since 2019.

Over 70% of the workforce have participated in Safety Connect, our behavioural safety programme.

Reduction in critical (life-threatening) incidents since 2021.

Over 50% of the workforce have seen a work colleague at risk, intervened and reported it.

BlueScope Steel Limited | Integrating HOP into foundational HSE processes | Global

In 2019, BlueScope started its global HOP (Human and Organisational Performance) journey by proactively piloting HOP-based Leadership Workshops as top management was curious about evolved safety thinking.

The stories being told to Directors and Executives of what they could learn and improve by applying HOP led to more than 1,500 of the Board of Directors, Executives, Senior Leaders, Managers and Supervisors globally undertaking training sessions with industry experts over a two-year period, and practically applying the HOP philosophies into their everyday work. Since then, HOP has been accepted and applied across the organisation.

5 HOP principles - a culture of learning versus blame:

1. Error is normal
   We all make mistakes

2. Blame fixes nothing
   Accountability is the willingness to accept responsibility

3. Learning is vital
   Learning is deliberate

4. Context drivers behaviour
   Systems drive outcome

5. How we respond matters
   How leaders act and respond counts

BlueScope is at the stage of systems and processes being simplified and updated to embed the HOP philosophy into everything it does so that the practice is sustained. Countless smart solutions have already been implemented to eliminate or reduce exposure to hazards.

In 2022, the NS BlueScope team made significant contributions:

>500 people participated in Learning Teams, small discussion groups aimed at finding smart solutions.

>100 actions and 20 major projects were completed as a result of ideas from frontline teams.

>50% people involved in risk reduction projects as a result of Learning Teams and the Better Questions, Stronger Solutions enquiry system.

Liberty Steel | Transforming safety culture and performance through human performance principles | Australia

In 2019, a decision was made to initiate a transformative journey to reshape the safety culture across the organisation. To drive this transformation, a comprehensive roadmap was developed, known as ‘The WRIB [We are InfraBuild] Safe Way.’ Underpinning this, are four strategic pillars, with the overarching goal of creating a world-class safety culture and safety performance.

1. Enabling performance
   Providing the tools to standardise and self-manage the leading and lagging indicators using digitisation.

2. Critical incident prevention
   Focusing on monitoring and continually verifying the effectiveness of the critical controls for low-likelihood and high-consequence events.

3. Interdependent safety culture
   Implementing a behavioural programme, Safety Connect, based on human performance factors to develop a collective belief that we all must look after each other and that human error can be predicted and prevented if we recognise the signs of error-likely situations.

4. Fit for work and fit for life
   Creating a strong focus to position mental health and wellbeing as the foundation of a safe workplace by providing tools to support and educate employees, including Mental Health First Aiders and the Employee Assistance Program.

63% improvement in total recordable injury frequency rate (TRIFR) since 2019.

30% reduction in critical (life-threatening) incidents since 2021.

90% of the workforce have participated in Safety Connect, our behavioural safety programme.

30% of the workforce have seen a work colleague at risk, intervened and reported it.

Over 700 critical-risk inspections were conducted to verify the effectiveness of critical controls since 2021.
In February 2022, a critical challenge arose at Columbus Stainless hot strip mill when a finishing mill backup roll (BUR) suffered a catastrophic failure, posing a risk to personnel and equipment.

The subsequent investigation revealed the likelihood of internal stresses in spalled rolls causing spontaneous breakage. To address this, a cross-functional team embarked on a mission to create a preventive solution that prioritised safety without compromising operational efficiency.

The team swiftly devised a unique concept: a roll cover made from repurposed conveyor belts. This cost-effective design, engineered to absorb impact and contain shattered roll pieces, eliminates the need for personnel to be in proximity during installation and removal. In just three months, the concept evolved from idea to reality, resulting in a functional prototype.

The impact has been transformative:

1. **Safety:** Personnel safety is vastly improved, as the risk of injury from spontaneous roll breakage is mitigated.
2. **Adaptability:** The cover’s adaptability to different roll sizes, types, and mills ensures broad applicability.
3. **Cost-effectiveness:** Beyond safety enhancements, the project boasts remarkable cost-effectiveness, with negligible material costs and efficient deployment.

This innovative solution not only safeguards employee wellbeing but also epitomises the fusion of creativity and practicality in addressing unforeseen challenges.
Confab, Tenaris’ production centre in Brazil, started evaluating the ergonomic conditions in its pipe manufacturing mills back in 2016. Before implementing its ergonomics programme, the production centre reported an average of 42 employees per year with work restrictions due to injuries associated with poor ergonomics. Upon launch, an initial assessment covered 178 risk activities registered by the HumanTech programme.

Following this assessment, a three-year ergonomics programme was introduced, including an annual review and evaluations by a cross-functional team to establish investment priorities. Two methods were applied: engineering solutions and improvements guided by the corresponding work areas. Employee engagement was key in promoting an ergonomic culture, which led to a reduction in ergonomic risks.

As the ergonomic culture developed, the project’s scope grew, driven by employee engagement and the expertise of specialists. By 2022, the number of activities reviewed since the programme launch reached 716. The programme established a robust ergonomic culture and led to a considerable reduction in ergonomic injuries, which decreased from an average of 42 to 7 cases annually. Compared to the 178 initial activities assessed in 2016, high-risk tasks decreased from 35% to 17%.

Number of work restrictions due to ergonomics injuries

To note: There was an increase in the quantity of worked hours: 1.3 million hours in 2020; 1.9 million hours in 2021; 2.5 million hours in 2022.

Between 2016 and 2022:
- High risk ergonomic injuries decreased from: 42 to 7
- High risk tasks decreased from: 35% to 17%
All high-potential safety risk scenarios were identified at Tata Steel by implementing a Process Safety Management framework. To prevent and mitigate high-potential scenarios, a number of safety barriers were identified. Audits were conducted once a year to assess the soundness of the barriers. However, in some instances, there was a fair probability of some early failure indications going unnoticed, which could cause the failure of barriers, leading to high potential incidents.

Consequently, Tata Steel felt that tracking the health of the barriers on a real-time basis was needed. The company’s innovative approach to real-time visualisation of risk movement aims to provide real-time insights and alerts on the level of risk by enabling the operators to be aware of the health of the barriers.

Unique features of the technology:

1. Dashboard
   A tableau-based online monitoring dashboard design connects three different databases: Level 1 & 2 automation systems, SAP plant maintenance system and a web-based safety management system.

2. Intelligence
   Different logics were developed to know the health of the barriers in the system, including the conditions for preventing false alarms.

3. Real-time technology
   Barrier health colour coding is available for real-time status.

4. Alerts
   A real-time alert is generated based on the health of barriers to operation and maintenance employees for prompt action.

ZERO
High-potential risk incidents

60 Million INR
savings through prevention of high-potential incidents

141
Barrier components health status monitored in real time

100%
Corrections of all abnormal notifications generated for process safety critical equipment