

HOW CAN MANUFACTURING COMPANIES IMPROVE WORK-PLACE SAFETY COMPLIANCE BY USING REAL-TIME VISUAL ANALYTICS?

PROBLEM

TRL Krosaki Refractories Ltd. experienced persistent safety compliance issues within its primary fabrication, processing, and distribution plants.

SOLUTION

The company implemented Avathon Industrial AI platform, applying computer vision to their existing CCTV infrastructure to address PPE compliance, protocols for heavy equipment use, perimeter security, and more.

OUTCOME

Our Industrial AI platform automatically detected PPE non-compliance, helping management understand and resolve their challenges more efficiently while promoting overall safety buy-in from workers.

Safety programs and proper protective equipment are of utmost importance in industrial manufacturing plants. From avoiding slips and falls to preventing injuries caused by heavy machinery, workers' lives and livelihoods depend on observing all safety requirements at all times, including wearing appropriate work vests, protective glasses and head protection, and other pieces of personal protective equipment (PPE).

Workers performing their duties alone or without close supervision tend to be less diligent about wearing PPE properly. Also, disregarding distancing guidelines and working too close to running machinery can invite potential major injuries.

Many manufacturers use closed-circuit television (CCTV) systems to monitor workers' behaviors, looking for potential hazards or noncompliance violations. But studies have shown that it's unrealistic for a human security officer to see, understand, and react appropriately to scenes playing out across dozens or hundreds of camera feeds simultaneously. Placing cameras without the ability to analyze their feeds in real time, or relying on human eyes to constantly monitor them, wastes valuable resources without the promise of value in terms of detecting and preventing problems.

PRIORITIZING SAFETY AND PPE PROTOCOLS

TRL Krosaki Refractories Ltd., a subsidiary of the India-based Tata Group, is a leading manufacturer of building and construction

materials, with seven plant facilities in India and China and annual revenues exceeding \$14B in 2021.

Company management identified the need to improve employee safety compliance, security, and fire prevention monitoring. Though they had CCTV cameras already installed, staffing the monitoring teams required to watch all their feeds was a considerable cost that produced unsatisfactory results. Seeking an automated and more accurate solution, they implemented Avathon Industrial AI platform at their plant in Belpahar, a city in the Jharsuguda district of Odisha, India.

Avathon Industrial AI platform is a highly scalable enterprise computer vision product that allows customers to configure and deploy vision-based applications using a low-code/no-code integration framework. It leverages proprietary visual AI technology to autonomously understand and react to complex scenes and multi-frame activities—like analyzing live video footage in real time to detect PPE violations.

TRL Krosaki targeted seven use cases for Industrial AI platform to help with:

- Proper usage of personal protective equipment
- Fire awareness
- Detecting intrusions
- General attentiveness
- Distance detection (near-miss prevention)
- Persons in distress
- Persons who are trapped

Soon after the Belpahar plant deployed Industrial AI platform, managers noticed significant advancements in PPE compliance—their primary area of concern. They added more cameras to increase coverage. Live insights on Industrial AI platform's intuitive user dashboard provide real-time views and historical data the company can use to track behavior, monitor violations, and measure progress. With enhanced visibility into PPE compliance and proven results, TRL Krosaki plans to scale Industrial AI platform across more of its plants to improve safety and security.

“At TRL Krosaki, we strive to ensure a safe working environment and commit zero accidents. Avathon's solution for health, safety, and environment enables us to monitor and understand safety compliance within our premises. We are very impressed with the team's ability to deploy an accurate solution in a short period. We have already started seeing a steady decline in the number of safety violations within our premises.”

KUMAR HERAMBA NAIK

Associate Vice President (ICT) & CIO, CISO for TRL Krosaki



PPE Compliance: The plant requires floor personnel to wear approved helmets, vests, gloves, and other PPE from 6 p.m. to 6 a.m. Industrial AI platform detected absent PPE and collected data for analysis of non-compliance.



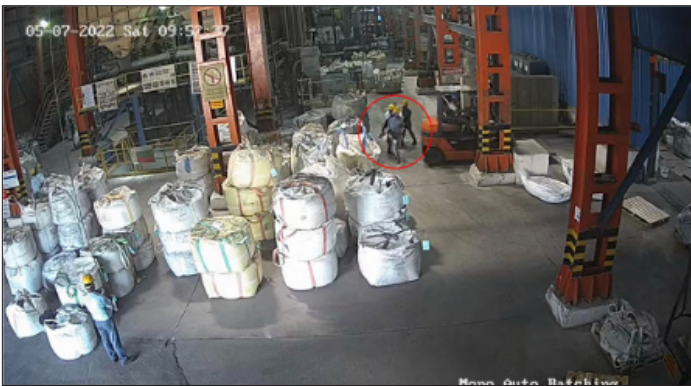
Fire Detection: Industrial AI platform checked for fire outbreaks, providing location details to speed mitigation actions. Alarms trigger within five seconds of fire detection.



Intrusion Alerts: Using Industrial AI platform, exterior cameras could detect illegal entry attempts or similar issues at the perimeter.



Attentiveness: Industrial AI platform reported instances of floor personnel distracted by their mobile phones, which can be dangerous.



Near-Miss Incidents: Industrial AI platform detected workers straying closer than five feet to a forklift or similar machinery to prevent near-miss safety hazards.



Incapacitation: Industrial AI platform alerted if a person fell or was prone on the ground, as in this test scenario.



SOS Detection: Personnel trapped in an area can alert plant staff by raising their hands over their head, creating an SOS emergency alert.

ABOUT AVATHON

Avathon, a leader in Industrial AI, extends the life of critical infrastructure while advancing the journey toward full autonomy. Avathon's Industrial AI platform empowers commercial and government customers with scalable, secure, and value-driven solutions that enhance efficiency and resilience across heavy industry.

To learn more about how Avathon's AI solutions can unlock the power in your data, visit www.avathon.com.