

Compendium of Good Practices on OHS 2024



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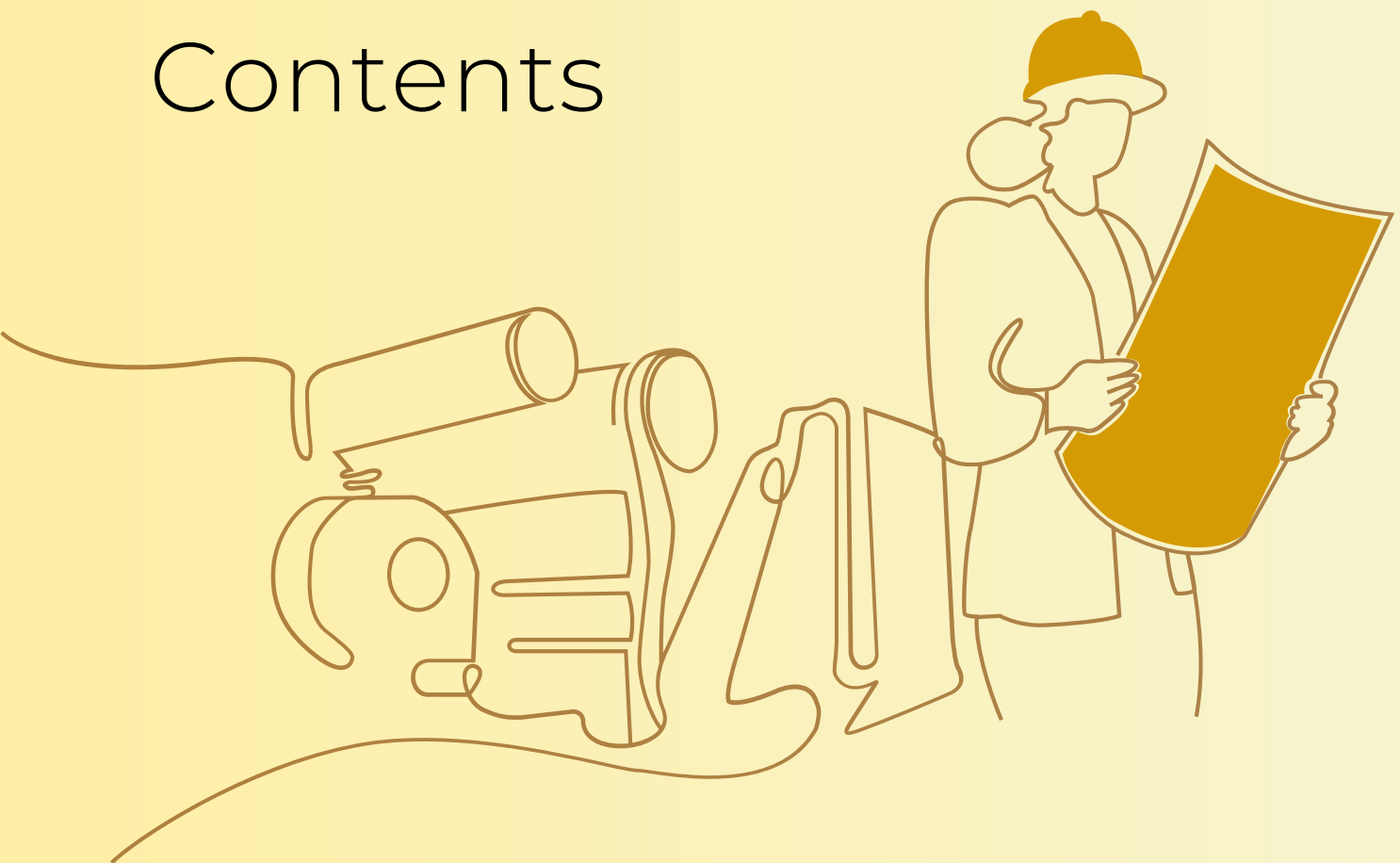
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01

Introduction

Occupational Health and Safety (OHS): A Cornerstone of Sustainability

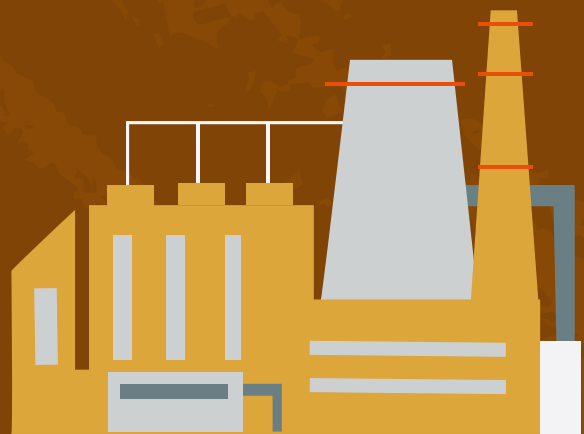
Occupational Health and Safety (OHS) is no longer a mere compliance obligation; it is a strategic imperative for businesses worldwide. As organizations increasingly recognize the significance of Environmental, Social, and Governance (ESG) factors, OHS has emerged as a critical component of their sustainability journey. By prioritizing the health, safety, and well-being of employees, companies not only fulfill their ethical responsibilities but also enhance their reputation, productivity, and overall business performance.

About This Compendium of Good Practices on OHS

This CII-Consultivo compendium is a testament to the growing commitment of organizations to OHS excellence. It showcases a diverse range of case studies that demonstrate how leading companies are integrating OHS into their core business strategies. By sharing best practices and innovative approaches, this document aims to inspire and empower organizations to elevate their OHS performance.

Through this compilation, we seek to highlight the positive impact of robust OHS programs on both employees and the broader community. By fostering a culture of safety, organizations can create healthier and more engaged workforces, reduce accidents and injuries, and contribute to sustainable development.

The good practices have been selected from the diverse OHS initiatives undertaken by various organizations at different plants. We share these best practices with all other organizations to perform better on their safety excellence journey.



02

Methodology

This compendium presents a curated collection of Occupational Health and Safety (OHS) best practices derived from various industries. The methodology employed in its development involved a comprehensive research process centered around identifying and analyzing effective OHS initiatives.

Good practices were gathered from a diverse range of organizations, spanning multiple sectors. These practices were then categorized into twelve distinct themes to facilitate understanding and application.

For each identified good practice, the compendium outlines the specific OHS challenge addressed, the innovative solution implemented, supporting visuals, and the corresponding benefits realized.

By showcasing these real-world examples, this document aims to provide practical insights and inspiration for organizations seeking to improve their OHS performance and create safer work environments.

Technology and Innovation at the Core of the OHS Excellence Journey



03 OHS Best Practices Overview



12

Total No. of Categories



28

Total No. of Good Practices

Mapping with the SDGs



By integrating innovative solutions, organizations are significantly enhancing the safety and well-being of the workforce and improving operational efficiency with overall sustainability.

These technological advancements are directly aligned with Sustainable Development Goals (SDGs), fostering a safer, healthier, and more productive workforce.

8 DECENT WORK AND ECONOMIC GROWTH



3 GOOD HEALTH AND WELL-BEING



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



11 SUSTAINABLE CITIES AND COMMUNITIES



7 AFFORDABLE AND CLEAN ENERGY



04

Best Practices

Occupational Health and Safety (OHS)

- A. Technology Intervention for Safety Management
- B. Work Environment
- C. Electrical Safety
- D. Crane Safety
- E. Material Handling
- F. Ergonomics
- G. Road Safety
- H. Work at Height
- I. Machine Safety
- J. Fire Safety
- K. Work Zone Monitoring
- L. Emergency Preparedness

Good practices are born from innovative approaches to managing risk.

By anticipating potential hazards and understanding effective solutions, these practices allow for proactive risk mitigation.

Furthermore, most of them can be successfully implemented across various industries.

Sl. No	Good practices	Company Name (Plant Location)
Category A: Technology Intervention for Safety Management		
A1	Tech-Enabled Central Safety Alert Command Centre	Tata Steel Limited
A2	AI and ML Based Safety Gadget Inspection	ITC Limited, Kidderpore
A3	Digital Incident Reporting System from Multi-Project Sites	Siemens Limited, Kolkata
A4	Drone Based Safety Surveillance & AI Analytics	TP Northern Odisha Distribution Ltd, Odisha
A5	Connecting Leadership with Shopfloor through AI-Enabled Dashboard	Tata Steel Limited
A6	Enhancing Workplace Safety and Engagement Through Digital Hazard, Suggestion, and Near-Miss Reporting	ITC Limited, Kidderpore
A7	Use of Non-Contact Voltage Detectors (NCVD) and Utility Detectors	Siemens Limited, Kolkata, ArcelorMittal Nippon Steel India Ltd, Paradeep
A8	Bio Metric Access Control	Tata Steel FAP, Gopalpur
A9	Promoting Safe Workplace through Digital Transformation	ArcelorMittal Nippon Steel India Ltd, Paradeep
Category B: Work Environment		
B1	Norikool Daylighting	ITC Limited, Kidderpore
B2	Introduction of Battery-Operated Portable Tools inside Tunnels	Siemens Limited, Mobility India, Kolkata Metro Project, Kolkata
Category C: Electrical Safety		
C1	Universal Telescopic Rod & Detachable Discharge Clamp	TP Northern Odisha Distribution Ltd, Odisha
C2	Use of Intelligent Remote Racking Device (IRRD) for Breaker Rack in Rack out	Tata Steel FAP, Gopalpur
Category D: Crane Safety		
D1	Use of Remote Cover to Prevent Accidental Operation of Crane	TRL Krosaki Refractories Limited, Belpahar
Category E: Material Handling		
E1	AI Intervention in MHE (Material Handling Equipment)	ITC Limited, Munger
E2	Anti-Tilt Device for Tippers	Joda West Iron & Manganese Mine Tata Steel Ltd, Joda Odisha

Sl. No	Good practices	Company Name (Plant Location)
Category F: Ergonomics		
F1	Use of Ring-Holding Device in RH Snorkel Plant to Improve Ergonomics	TRL Krosaki Refractories Limited, Belpahar
F2	Use of Manipulator to Handle Heavy Refractory Bricks to Improve Ergonomics	TRL Krosaki Refractories Limited, Belpahar
Category G: Road Safety		
G1	Promoting Road Safety through Technology	Siemens Limited, Kolkata
G2	Driver Fatigue Monitoring System	Joda West Iron & Manganese Mine Tata Steel Ltd, Joda Odisha
G3	Introduction of Three-layers Barrication on a Busy City Road by Implementation of Engineering Control	Siemens Limited, Kolkata
Category H: Work at Height		
H1	Drone for Solar Panel Cleaning	ITC Limited, Kidderpore
H2	Sensor Controlled Full Body Harness	TP Northern Odisha Distribution Ltd, Odisha
Category I: Machine Safety		
I1	Introduction of Safety Programmable Logic Controllers (PLCs)	ITC Limited, Kidderpore
I2	Proximity Sensor Integrated with Conveyor Safety Guard for Enhanced Operational Safety	ArcelorMittal Nippon Steel India Ltd, Paradeep
Category J: Fire Safety		
J1	Fire Management at Cable Tunnel & Cable Vault	Jamshedpur Continuous Annealing & Processing Company Pvt Ltd (JCAPCPL), Jamshedpur
Category K: Work zone monitoring		
K1	Web-Enabled Illumination Survey	Joda West Iron & Manganese Mine Tata Steel Ltd, Joda Odisha
Category L: Emergency Preparedness		
L1	Emergency Rescue during Crane Operation	Jamshedpur Continuous Annealing & Processing Company Pvt Ltd (JCAPCPL), Jamshedpur

● A1 [Category A: Technology Intervention for Safety Management / OHS Good Practice 1]

Tech-Enabled Central Safety Alert Command Centre

Tata Steel Limited



Problem Statement

The challenge was in setting up a centralized safety monitoring system with video analytics in critical zones. This would help to enable proactive hazard detection and risk management.

Video analytics identified hazards

Identified risks proactively

Solutions

The solution involves creating a system that sends immediate alerts. It uses advanced technology to keep workers connected and informed, and closely monitors safety processes to prevent accidents. The solutions lay in real-time alerts driven by video analytics, Suraksha Card, LORA WAN, and process safety monitoring.

Real-time alerts driven by video analytics

Suraksha Card, LoRAWAN

Process Safety Monitoring



Implementing these solutions brings multiple advantages: it significantly boosts workplace safety, enhances the efficiency of operations, and fosters a mindset focused on preventing harm. These combined benefits lead to a safer, more productive, and conscientious work environment.



Benefits



Enhanced workplace safety



Increased operational efficiency



"No harm" mindset

A2 [Category A: Technology Intervention for Safety Management / OHS Good Practice 2]

AI and ML Based Safety Gadget Inspection

ITC Limited
Kidderpore



Problem Statement

Maintaining strict adherence to safety protocols can be difficult in the absence of direct oversight, which increases the risk of non-compliance and potential accidents. Ensuring safety gadget compliance is challenging without supervision, leading to potential injuries.

Gadget compliance is challenging without supervision

Identifying safety challenges

Leading to potential injuries

Solutions

AI/ML analytics on CCTV identify safety violations, triggering immediate announcements and SMS alerts to managers.

AI/ML Analytics on CCTV

Trigger immediate announcements

SMS alerts to managers



The implementation of this initiative brings several significant advantages, ensuring that operations are consistently safe and efficient. It allows for timely interventions, consistent application of safety measures, and reduces the need for continuous oversight.



Benefits



Real-time monitoring is enabled.



Immediate proactive action is possible.



Adherence to safety equipment is guaranteed.



Ongoing monitoring is not needed.



● A3 [Category A: Technology Intervention for Safety Management / OHS Good Practice 3]

Digital Incident Reporting System from Multi-Project Sites

Siemens Limited
Kolkata

SIEMENS

Problem Statement

From the project site, reporting safety incidents like unsafe acts, conditions, near misses, and others was difficult due to low reporting rates and the inefficient manual process.

Inefficient manual processes

Low reporting rates

Solution

Implementing QR codes streamlined incident reporting from project sites, enabling centralized monitoring and collaborative action to minimize risks.

Streamlines incident reporting

Enables centralized monitoring

Minimizes risks

Implementing innovative reporting methods, such as QR code-based systems, not only enhances safety measures by encouraging more proactive identification of hazards but also aligns with environmental goals. These changes demonstrate a commitment to both operational efficiency and sustainable practices.



Benefits



Implementing QR code-based reporting led to a 36% increase in the reporting of unsafe acts, unsafe conditions, and near misses.



This transition also saved the equivalent of 2.8 trees, demonstrating its positive impact on environmental sustainability and operational efficiency.

● A4 [Category A: Technology Intervention for Safety Management / OHS Good Practice 4]

Drone Based Safety Surveillance & AI Analytics

**TP Northern Odisha
Distribution Ltd**
Odisha

TPNODL
TP NORTHERN ODISHA DISTRIBUTION LIMITED
(A Tata Power and Odisha Government Joint Venture)

Problem Statement

The challenge is ensuring timely and effective prevention of on-site accidents. AI-powered drone analytics are needed to deliver real-time safety alerts to mobile and web platforms, enhancing overall site safety and reducing the risk of incidents.

Ensuring timely and effective
prevention of on-site accidents

The need for real-time safety alerts

Solutions

AI-powered drone surveillance provides instant safety insights, enabling proactive measures through mobile and web alerts.

AI-powered drone surveillance

Instant safety insights

Through mobile and web alerts



This initiative introduces a major improvement in overseeing operations in less accessible locations, enhancing the ability to maintain safety standards and ensure compliance in challenging environments.



Benefits



Monitoring safety practices in remote work areas has become significantly easier.

A5 [Category A: Technology Intervention for Safety Management / OHS Good Practice 5]

Connecting Leadership with Shopfloor through AI-Enabled Dashboard

Tata Steel Limited



Problem Statement

A dashboard was required to enhance safety performance by identifying challenges and enabling effective, proactive interventions to address them.



Identifying safety challenges

Enabling effective, proactive interventions

Solutions

The Safety Performance Index (SPI) is an automated scoring system that uses lead indicators to identify safety vulnerabilities and improve performance by integrating various IT system data.

Automated scoring system

Identifies safety vulnerabilities

Integrates various IT systems' data

Safety Violation

View

TID

TS-09-2024

16-09-2024

Map/View

PLANT PLANT

Camera

Alt

img	Device Location	Use Case	# P / # G	Date	Action
	Stair 1 Iron On Vinyl Fender	GLOVE	0/1	16-09-2024 22:37:39	AS / RJ / NC / SA
	3381MFG ROOM	GLOVE	0/1	16-09-2024 14:57:10	AS / RJ / NC / SA
	3362ENTRY	OGOGUE	0/1	16-09-2024 14:44:10	AS / RJ / NC / SA
	4 8TH DBT STAIR	VEST	0/1	16-09-2024 14:44:05	AS / RJ / NC / SA
	Runner Right Side	GLOVE	0/1	16-09-2024 14:24:08	AS / RJ / NC / SA
	Runner Right Side	VEST	0/1	16-09-2024 14:24:08	AS / RJ / NC / SA
	Door 1 Feed Choke	GLOVE	0/1	16-09-2024 10:01:56	AS / RJ / NC / SA
	Door 1 Feed Choke	GLOVE	0/1	16-09-2024 09:57:29	AS / RJ / NC / SA
	Door 1 Feed Choke	OGOGUE	0/1	16-09-2024 09:58:01	AS / RJ / NC / SA
	Door 1 Feed Choke	GLOVE	0/1	16-09-2024 09:47:04	AS / RJ / NC / SA
	DBT 144B	VEST	0/1	16-09-2024 09:36:40	AS / RJ / NC / SA
	Door 1 Feed Choke	GLOVE	0/1	16-09-2024 09:32:16	AS / RJ / NC / SA
	Door 1 Feed Choke	GLOVE	0/1	16-09-2024 09:30:09	AS / RJ / NC / SA
	3381MFG ROOM	HELMET	0/1	16-09-2024 07:50:46	AS / RJ / NC / SA
	4 8TH DBT STAIR	HELMET	0/1	16-09-2024 07:45:47	AS / RJ / NC / SA
	3381MFG ROOM	HELMET	0/1	16-09-2024 07:40:43	AS / RJ / NC / SA
	3381MFG ROOM	HELMET	0/1	16-09-2024 07:35:46	AS / RJ / NC / SA
	3381MFG ROOM	HELMET	0/1	16-09-2024 07:31:28	AS / RJ / NC / SA
	4 8TH DBT STAIR	OGOGUE	0/1	16-09-2024 07:27:24	AS / RJ / NC / SA
	4 8TH DBT STAIR	HELMET	0/1	16-09-2024 07:27:21	AS / RJ / NC / SA
	3381MFG ROOM	HELMET	0/1	16-09-2024 07:25:54	AS / RJ / NC / SA
	4 8TH DBT STAIR	OGOGUE	0/1	16-09-2024 07:25:19	AS / RJ / NC / SA
	4 8TH DBT STAIR	HELMET	0/1	16-09-2024 07:25:16	AS / RJ / NC / SA
	3381MFG ROOM	HELMET	0/1	16-09-2024 07:23:34	AS / RJ / NC / SA
	4 8TH DBT STAIR	HELMET	0/1	16-09-2024 07:23:33	AS / RJ / NC / SA
	3381MFG ROOM	HELMET	0/1	16-09-2024 07:21:09	AS / RJ / NC / SA
	4 8TH DBT STAIR	HELMET	0/1	16-09-2024 07:20:47	AS / RJ / NC / SA

Recent initiatives have led to significant advancements in the organization's overall safety culture. These improvements reflect stronger leadership engagement, heightened commitment from management, and more consistent monitoring of safety practices, driving better outcomes across various safety-related metrics.



Benefits



Safety key performance indicators have shown improvement.



**Leadership and line management
have demonstrated increased
commitment to safety.**



Adherence to safety KPIs has risen.

● A6 [Category A: Technology Intervention for Safety Management / OHS Good Practice 6]

Enhancing Workplace Safety and Engagement Through Digital Hazard, Suggestion, and Near-Miss Reporting

ITC Limited
Kidderpore



Problem Statement

The pen-and-paper reporting system discouraged employees from reporting near misses, hindering risk management and injury prevention.

Hindered risk-management

Solutions

A QR code-based system provided easy access to the "Hazard & Suggestion Reporting" portal for all smartphone users in the plant.

A QR code-based system

Easy access to the "Hazard & Suggestion Reporting" portal

Open to all smartphone users in the plant



This initiative brings several significant improvements to the organization, fostering better communication, streamlined processes, and increased involvement from all members.

Benefits

- Easy access to all.
- Centralized repository of all hazards / near misses/suggestions.
- Transparency across organization.
- Enhanced participation.

● A7 [Category A: Technology Intervention for Safety Management / OHS Good Practice 7]

Use of Non-Contact Voltage Detectors (NCVD) and Utility Detectors

Siemens Limited
Kolkata

SIEMENS

ArcelorMittal Nippon
Steel India Ltd.
Paradeep

**AM/NS
INDIA**

Problem Statement

Drilling without verifying utility locations is extremely dangerous, risking electric shock and costly property damage. Utility detection is crucial for safety and compliance.

Extremely dangerous

Risking electric shock

Costly property damage

Solution

This solution is about workplace and workers' safety initiative: NCVDs and utility detectors

Protect workers and infrastructure by accurately locating underground utilities

Prevent damage and ensure a safe drilling process



Benefits

NCVDs and utility detectors have proven to be invaluable tools by ultimately enhancing safety and preventing accidents.



Completely preventing electric shock



Reducing expenses



Providing crucial information about underground utilities



● A8 [Category A: Technology Intervention for Safety Management / OHS Good Practice 8]

Biometric Access Control

Tata Steel FAP
Gopalpur



Problem Statement

No fail-safe system to prevent contact with hazardous equipment.

No fail-safe system

Preventing contact with hazardous equipment

Solution

Biometric access control prevents unauthorized individuals from accessing electrically hazardous areas.

Biometric access control

Prevents access by unauthorized individuals

Protects electrically hazardous areas



SDG
Linkage



The integration of biometric access control enhances safety by significantly reducing the risk of electrical incidents, ensuring that only authorized personnel can access and operate critical systems securely.

Benefits



Prevention of electrical accidents



● A9 [Category A: Technology Intervention for Safety Management / OHS Good Practice 9]

Promoting Safe Workplace through Digital Transformation

ArcelorMittal Nippon
Steel India Ltd.
Paradeep

**AM/NS
INDIA**

Problem Statement

Absence of site-specific information and safe working procedures for equipment, tools, and tackles.

Absence of site-specific information

Absence of safe working
procedures for equipment



AM/NS INDIA Hood Exhaust Fan Information & Safe Operating Procedures

➤ Equipment Name:- Hood Exhaust Fan

➤ Equipment Tag No: GS_042_MO1

➤ Description: Hood exhaust fan is one of the process fans out of 5 process fans for indurating furnace. Hood exhaust fan exhausts the hot air laden with moisture and dust coming out through the bottom of the bed in updraft drying zone and discharges towards RC Chimney through the electrostatic precipitator.

Solutions

Equipment tags with embedded QR codes for quick information access.

Equipment tags with embedded
QR codes

For quick information access

Benefits



Implementing this will enhance equipment safety awareness, outline best practices and precautions, and contribute to a safer work environment.



● B1 [Category B: Work Environment / OHS Good Practice 1]

Norikool Daylighting

ITC Limited
Kidderpore



Problem Statement

Transparent sheets on the rooftop increased daylight but became fragile and reduced light due to dirt. Heat also transferred inside.

Transparent sheets became fragile

Became dirty, transferring heat

Solutions

Norikool skylights offer a superior lighting solution by providing uniform light distribution, reducing heat gain, and protecting against harmful UV rays.

A superior illumination

Reduces heat gain

Protects against harmful UV rays

This initiative delivers a range of impactful benefits, enhancing operational efficiency, improving overall workplace conditions, and supporting broader ecological goals. The following outcomes demonstrate its effectiveness in promoting a safer and more sustainable work environment.



Benefits



Healthier workspace with minimized UV radiation



Better workplace illumination and working condition



Additionally reduces energy consumption and environmental sustainability



B2 [Category B: Work Environment / OHS Good Practice 2]

Introduction of Battery-Operated Portable Tools inside Tunnels

Siemens Limited
Kolkata

SIEMENS

Problem Statement

Diesel generators (DG sets) operating within the tunnel produce harmful fumes. Cable entanglement, and insulation damage.

Harmful fumes, cable entanglement

Insulation damage

Risk of electrocution



Solutions

Battery-powered cordless tools are employed for installation tasks within tunnel segments. This helps to ensure no electrocution, smoke emission and carbon generation by implementing "Engineering Control".

Battery-powered cordless tools

Superior installations

This initiative offers several significant advantages for work environment, worker well-being and sustainability.

It promotes a healthier environment, enhances safety by reducing hazards, and improves tool usability.



SDG Linkage



Benefits



Ergonomic Design

Lightweight and ergonomically designed tools minimize user fatigue and improve handling.



Safety Benefits

Eliminates risks of electrocution



Environmental Impact

Produces zero emissions, contributing to a cleaner and healthier work environment

● C1 [Category C: Electrical Safety / OHS Good Practice 1]

Universal Telescopic Rod & Detachable Discharge Clamp

TP Northern Odisha
Distribution Ltd
Odisha

TPNODL
TP NORTHERN ODISHA DISTRIBUTION LIMITED
(A Tata Power and Odisha Government Joint Venture)

Problem Statement

Field staff encountered significant safety hazards and logistical challenges while transporting seven long discharge rods and a neon tester, particularly on motorcycles.

Safety hazards

Logistical challenges

Benefits



Minimizes the occurrence of electrical accidents resulting from ineffective safety zone establishment



SDG
Linkage



Solutions

Implemented a safer and more efficient solution by developing a single-rod, self-locking clamp operated from the ground.

Single-rod with self-locking clamp

Operated from the ground

Safer and more efficient

This intervention significantly enhances safety protocols by ensuring the effective establishment of designated safety zones, thereby reducing the risk of electrical accidents.



● C2 [Category C: Electrical Safety / OHS Good Practice 2]

Use of Intelligent Remote Racking Device (IRRD) for Breaker Rack in Rack out

Tata Steel FAP
Gopalpur



Problem Statement

Racking in and out HT VCBs posed a significant electrical shock risk to workers.

Racking in and out HT VCBs

Significant electrical shock risk to workers



Solutions

The introduction of IRRD technology has eliminated the electrical shock hazard previously associated with HT VCB racking operations, allowing personnel to work from a safe distance.

IRRD technology introduced

Electrical shock hazard eliminated

Personnel can work from a safe distance

Implementing this solution offers numerous benefits: it greatly improves safety within the workplace, streamlines operational processes, and cultivates a proactive approach to hazard prevention. Together, these advantages create a safer, more efficient, and mindful work environment.

Benefits



Prevention of electrical accidents



SDG
Linkage



8 DECENT WORK AND ECONOMIC GROWTH



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



3 GOOD HEALTH AND WELL-BEING



● D1 [Category D: Crane Safety / OHS Good Practice 1]

Use of Remote Cover to Prevent Accidental Operation of Crane

TRL Krosaki
Refractories Limited
Belpahar



Problem Statement

The problem is that **EOT crane remotes are vulnerable to accidental button activation** and **external damage**, which could lead to unintended operations.

EOT crane remotes are vulnerable

Could lead to unintended operations

Solutions

The solution is to use a **hard transparent PVC cover over the remote** to prevent accidental button activation and protect it from external damage, ensuring only the operator can use it when needed.

A hard, transparent PVC cover

Ensuring only the operator can use it



Remote Cover

This intervention introduces critical safeguards that enhance the security of EOT crane controls, prevent unintended activations and damage, and ensure that only authorized personnel can operate the equipment safely and effectively.

Benefits

- Enhanced safety and protection of the EOT crane remote
- Preventing accidental button activation and external damage
- Ensuring only authorized operation

E1 [Category E: Material Handling / OHS Good Practice 1]

AI Intervention in MHE (Material Handling Equipment)

ITC Limited
Munger



Problem Statement

Separating people and vehicles in older factories is often impractical due to design limitations.

Separating people and vehicles arduous

Owing to design limitations

Solutions

AI-powered cameras detect pedestrians in blind spots, triggering alerts, automatic vehicle deceleration, and storing incident data for six months.

AI-powered cameras

Automatic vehicle deceleration



This intervention reduces possibilities of interaction of MHE with human beings. **It significantly decreases the likelihood of human-MHE collisions.**



SDG
Linkage



Benefits



Significantly reduced likelihood of human-MHE collisions



E2 [Category E: Material Handling / OHS Good Practice 2]

Anti-Tilt Device for Tippers

Joda West Iron &
Manganese Mine
Tata Steel Ltd
Joda, Odisha



Problem Statement

Toppling of Heavy vehicles while unloading in the slopy areas.

Hazardous tipping of heavy vehicles

While unloading on sloping terrain

Solutions

The interlocking system with an inclinometer halts tipping when vehicle angles exceed set limits. **It prevents vehicle tipping by automatically halting operations when incline angles reach critical thresholds.**

An inclinometer-equipped interlocking system

Halts operations before angles reach critical thresholds

Anti Tilting Device

Interlocking in Tippers



The system provides an audio alert at 5 degrees and halts hydraulic operation at 7 degrees during tipping.



Benefits



The system issues an audible warning at a 5-degree tilt and automatically stops hydraulic operations at a 7-degree angle to prevent tipping.



FI [Category F: Ergonomics / OHS Good Practice 1]

Use of Ring-Holding Device in RH Snorkel Plant to Improve Ergonomics

**TRL Krosaki
Refractories Limited**
Belpahar



Problem Statement

The challenge is to minimize safety risks associated with manual handling of rings, which can lead to ring falls, ergonomic strain, and poor housekeeping. The solution requires a device that eliminates the need for human intervention during this process.

Previously, this task was performed manually, increasing the risk of musculoskeletal injuries.

Risks associated with manual handling of rings

Musculoskeletal injuries

Solutions

The ring-holding device enhances safety by automating the process, preventing ring drops, reducing ergonomic strain, and promoting a cleaner work environment.

Ring-holding device that works by automation

Reduces ergonomic strain



Ring Holding Device

Ergonomic Enhancement through Ring Holding Device in RH Snorkel Plant

Benefits

-  A cleaner work environment
-  Process automation
-  Enhanced safety



F2 [Category F: Ergonomics / OHS Good Practice 2]

Use of Manipulator to Handle Heavy Refractory Bricks to Improve Ergonomics

TRL Krosaki
Refractories Limited
Belpahar



Problem Statement

Previously, this task was performed manually, increasing the risk of musculoskeletal injuries.

Earlier, bricks were handled manually

Risk of musculoskeletal injuries

Solutions

Pneumatic manipulators are employed for the safe handling of long and heavy dolomite-fired refractory bricks.

Pneumatic manipulators

For safer handling



SDG
Linkage



As part of the mechanization initiative, Pneumatic Manipulators are being used for safe handling of long & heavy Dolomite-fired refractory bricks.

Benefits



Pneumatic manipulators have been implemented to mitigate ergonomic risks



Safer handling of long and heavy dolomite-fired refractory bricks



Manipulator

● G1 [Category G: Road Safety / OHS Good Practice 1]

Promoting Road Safety through Technology

Siemens Limited
Kolkata

SIEMENS

Problem Statement

The issue at hand is the need to effectively monitor and improve the driving behavior of field employees. A solution is required that can identify potential risks in real-time, alert management, and provide safety guidance to reduce accidents.

To improve driving behavior

To alert management

Solution

Siemens has introduced the **Safety Connect App**. Leveraging smartphone sensors, the app analyzes driving habits to provide safety checklists, gamified challenges, incident reporting, and SOS functions, promoting safer work environments and reducing manager anxiety. This is a Behavior Based Safety (BBS) & road safety initiative.

Leveraging smartphone sensors, an app that analyzes driving habits



Benefits

Driver behavior monitoring has significantly enhanced road safety by reducing:



Harsh braking by 12%



Overspeeding by 1%



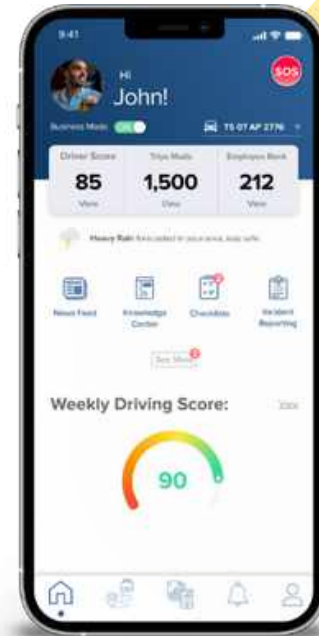
Phone use while driving by 2%



Harsh acceleration by 1%



Additionally, the introduction of a management profile with an automatic lock feature that disables Siri/Alexa while driving has effectively eliminated distractions.



● G2 [Category G: Road Safety / OHS Good Practice 2]

Driver Fatigue Monitoring System

Joda West Iron &
Manganese Mine
Tata Steel Ltd
Joda, Odisha



Problem Statement

Drowsy driving is a significant contributor to vehicle accidents.

Drowsy driving

Vehicle accidents

Solution

The system employs a driver-facing camera and machine learning algorithms to accurately assess a driver's cognitive state.

Driver-facing camera

ML algorithms to assess driver's cognitive state



Benefits



Real-time monitoring

Continuous surveillance from a central control room



Instant alerts

Text messages with video clips are sent to drivers and shift in-charges.



Emergency communication

Two-way communication channels are available for urgent situations.



SDG
Linkage



G3 [Category G: Road Safety / OHS Good Practice 3]

Introduction of Three-layers Barricade on a Busy City Road by Implementation of Engineering Control

Siemens Limited
Kolkata

SIEMENS

Problem Statement

Vehicles entering the protected work zone lack adequate safeguards.

Work zones lack adequate safeguards

Solution

Three-Layer Road Barricade System

Incorporates multiple layers of protective barriers

Features pipe and rope light barricades, PVC barricades, and metal barricades

Includes essential signage and posters

Designed based on lessons learned from previous road barricade failures



Benefits



Traffic Marshal Safety

Eliminate the need for traffic marshals to work outside the barricade zone.



Enhanced Barrier Protection

The three-layer barricade system offers superior protection against accident debris compared to traditional plastic barriers.



Improved Work Zone Security

The three-layer barrier system effectively prevents unauthorized vehicle entry into the work zone.



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3
GOOD HEALTH
AND WELL-BEING



8
DECENT WORK
AND ECONOMIC
GROWTH



9
INDUSTRY, INNOVATION
AND INFRASTRUCTURE



11
SUSTAINABLE CITIES
AND COMMUNITIES

● H1 [Category H: Work at Height / OHS Good Practice 1]

Drone for Solar Panel Cleaning

ITC Limited
Kidderpore



Problem Statement

Cleaning solar panels is hazardous and its effectiveness depends on human labor.

Cleaning solar panels is hazardous

Dependant on human labor

Solution

A proof of concept for cleaning solar panels using a drone has been successfully demonstrated. The implementation phase is currently in progress.

Cleaning solar panels using a drone

Implementation in progress



Benefits



Risk of slip and fall will be reduced.



Optimum use of water and effective cleaning will be ensured.



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H2 [Category H: Work at Height / OHS Good Practice 2]

Sensor Controlled Full Body Harness

TP Northern Odisha
Distribution Ltd

Odisha

TPNODL
TP NORTHERN ODISHA DISTRIBUTION LIMITED
(A Tata Power and Odisha Government Joint Venture)

Problem Statement

Difficulty visualizing the health of the full body harness and lanyard usage during climbing.

Difficulty in visualizing

Climbing fraught with danger

Solutions

Step-by-step audible, visual, and tactile alerts

Automatic belt-tightening

Mandatory harness usage

Proper helmet fit and securement

Green light confirmation of full compliance



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Benefits



Establishing and executing safe procedures for working at height

II [Category I: Machine Safety / OHS Good Practice 1]

Introduction of Safety Programmable Logic Controllers (PLCs)

ITC Limited
Kidderpore



Problem Statement

The challenge is ensuring that safety systems are robust against internal faults and unauthorized changes. A solution is needed that offers high resistance to malfunctions and tampering, thereby enhancing overall safety measures.

Internal faults and unauthorized changes

Malfunctions and tampering

Solutions

Safety PLCs are engineered to be highly resistant to internal malfunctions and unauthorized modifications, providing enhanced safety measures.

Safety PLCs (Programmable Logic Controllers)

Enhanced safety measures



Benefits

- Comprehensive input/output signal diagnosis, monitoring, and redundancy
- Self-diagnostic capabilities for internal software and hardware
- High resistance to failure
- Dedicated software for safety functions



12 [Category I: Machine Safety / OHS Good Practice 2]

Proximity Sensor Integrated with Conveyor Safety Guard for Enhanced Operational Safety

ArcelorMittal Nippon
Steel India Ltd.
Paradeep

AM/NS
INDIA

Problem Statement

The issue arises when a safety guard is removed, potentially leading to hazardous situations. To address this, the system needs to automatically shut down the conveyor immediately upon detecting the removal of a safety guard, ensuring operator safety.

Removal of safety guard leads to hazardous situations

Solutions

Enhanced Worker Safety:

The system proactively safeguards workers by automatically halting conveyor operations when safety guards are removed, minimizing injury risks.

Improved Operational Efficiency:

By preventing unplanned conveyor shutdowns caused by missing safety guards, the system enhances overall productivity and reduces equipment damage.



Proximity Sensor Integrated with Conveyor Safety Guard for Enhanced Operational Safety



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Benefits



Reduces the risk of worker injury by automatically halting conveyor operations when safety guards are removed



Provides an essential safety net by eliminating reliance on human accuracy or error and ensuring consistent protection

J1 [Category J: Fire Safety / OHS Good Practice 1]

Fire Management at Cable Tunnel & Cable Vault

Jamshedpur Continuous Annealing & Processing Company Pvt Ltd (JCAPCPL)

JCAPCPL

Problem Statement

The problem is that effective fire response within cable tunnels or galleries requires the early detection and immediate action to prevent incidents from escalating. A system is needed to promptly identify and combat fires at their onset.

Immediate detection measure

Combatting fire at the onset

Solutions

Implementing FDA sensor-based tripping mechanisms for AHU, CSU, and FCU units. Installing water sprinkler systems in cable areas. Removing combustible HDPE pipe trays. Placing fire suppression balls in tunnels and vaults.

Implementing FDA sensor-based tripping mechanisms

Installing water sprinkler systems

Removing combustible HDPE pipe trays

Adopting these solutions offers numerous benefits: it greatly improves workplace safety, streamlines operational processes, and encourages a proactive approach to risk prevention. These combined effects create a more secure, efficient, and mindful work environment.

Benefits



Fire Detection: Early Fire Warning



Fire Prevention: Fire Hazard Mitigation



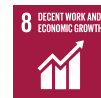
Fire Control: Fire Containment



Fire Suppression: Fire Extinguishment



SDG Linkage



K1 [Category K: Work Zone Monitoring / OHS Good Practice 1]

Web-Enabled Illumination Survey

Tata Steel Limited
Joda West Iron &
Manganese Mine
Joda, Odisha



Problem Statement

Manual illumination measurements are time-consuming and often inaccurate, leading to safety hazards and increased energy consumption due to suboptimal lighting conditions.

Manual illumination measurements are time-consuming

Often inaccurate too

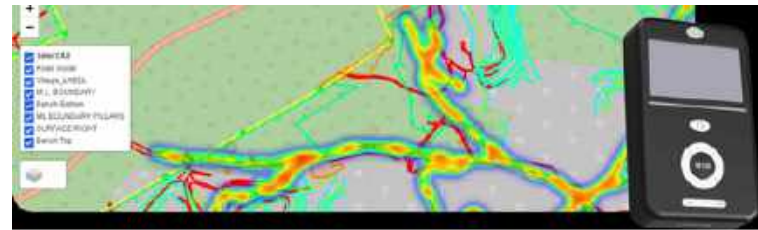
Solutions

Web-enabled Illumination Surveying Equipment is a combined hardware and software solution that streamlines illumination surveys. A portable device collects data as it moves through the target area, while cloud-based software processes and maps the information efficiently.

Web-enabled Illumination Surveying Equipment

A combined hardware and software solution

Streamlines illumination surveys



REPORT OF ILLUMINATION SURVEY FOR Mine Areas - Mine						
Sl.No.	Place/Area to be Illuminated	Minimum standards of Illumination to be provided (lx)				Remarks
		10	20	30	40	
1	Workshop of Heavy Machinery	15	20	25	30	Atleast one average value of foot-candle is recorded for the area
2	at Site where working area is	NA	-	25	-	NA
3	at Site where work is not done	15	-	20	-	NA
4	Place where material is stored	15	-	20	-	NA
5	Place where loading/unloading of material is done	15	20	25	30	Atleast one average value of foot-candle is recorded for the area
6	Operator cab of machine at workshop	15	20	25	30	Atleast one average value of foot-candle is recorded for the area
7	at Site where work is not done	15	-	20	-	NA
8	at Site where work is not done	15	-	20	-	NA

Implementing these solutions brings multiple advantages: it significantly boosts workplace safety, and enhances the efficacy of operations. These combined benefits lead to a safer, more productive, and mindful work environment.

Benefits



Time efficiency

Reduced illumination survey time from two days to two hours



Compliance optimization

Ensured compliance with illumination standards through data-driven adjustments



Energy savings

Achieved energy cost reduction through optimized lighting levels



● L1 [Category L: Emergency Preparedness / OHS Good Practice 1]

Emergency Rescue during Crane Operation

Tata Steel Limited
Joda West Iron &
Manganese Mine
Joda, Odisha



Problem Statement

The problem arises in an emergency situation where the primary concern is ensuring the swift evacuation of the crane operator from the cabin to ensure their safety.

Evacuation of crane operator

Benefits



Implementation of standardized fire escape chute structure



Elimination of fall hazards

Solutions

Fitment arrangement from outside. An escape chute system was installed within the operator's cabin. Escape fabric is contained within a box inside the cabin. External fittings for development

Fitment arrangement from outside

An escape chute system was installed

Escape fabric and external fittings



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05

Way Forward

The case studies presented in this compendium offer valuable insights into the diverse approaches organizations have taken to address OHS challenges. These examples demonstrate that effective OHS management is not confined to specific industries but can be adapted and implemented across various sectors.

It is essential for organizations to understand the OHS practices showcased in this document and identify those that align with their specific requirements. By customizing and adopting relevant best practices, companies can enhance their OHS performance and create safer workplace for all.

To foster a culture of continuous improvement, it is imperative to share knowledge and experiences. We encourage organizations to contribute to this ongoing effort by sharing their own OHS success stories and best practices. By collectively sharing knowledge, we can collectively advance OHS standards and work towards a shared goal of zero harm.

This compendium serves as a catalyst for change. By adopting similar best practices, organizations improve their OHS excellence. With the same, they can link these activities with sustainable growth and impact.

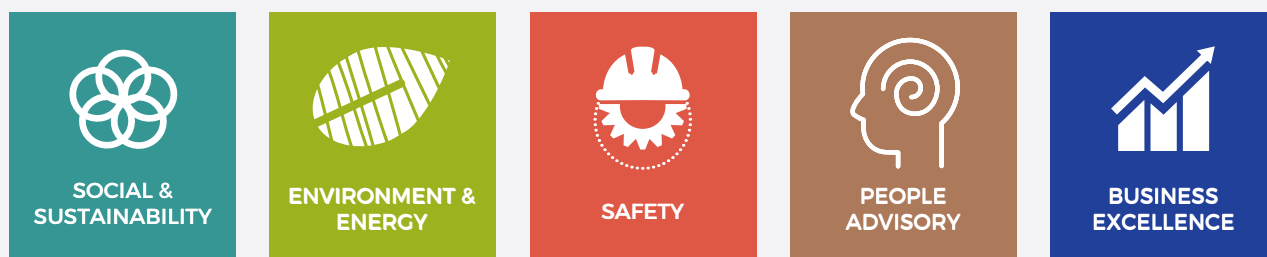
As we move forward, it is crucial to remember that OHS is an evolving field. By staying informed about emerging trends and best practices, organizations can stay ahead of challenges and capitalize on opportunities. We encourage continued collaboration and knowledge sharing to create a safer and healthier workplace for all.

Consultivo helps organisations globally to solve business challenges in Sustainability, ESG, Business Excellence & Risk Management.

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Hospital	Mall & Hypermarket	Technology & Telecom	FMCG	Supply Chain	Agribusiness

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- Approved Social Impact Assessment (SIA) Agency of Govt. of Jharkhand, India
- Global Approved Auditor of Pharmaceutical Supply Chain Initiative (PSCI), UK
- Approved Audit Body for CORE (Code of Responsible Extraction)
- Knowledge & Technical Partner of Confederation of Indian Industry (CII), Training & Knowledge Partner of Indian Chamber of Commerce (ICC)
- Approved Audit and Monitoring Partner of Ethical Tea Partnership (ETP), UK

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The Confederation of Indian Industry (CII) works to create and sustain an environment conducive to the development of India, partnering Industry, Government and civil society, through advisory and consultative processes.

CII is a non-government, not-for-profit, industry-led and industry-managed organization, with around 9,000 members from the private as well as public sectors, including SMEs and MNCs, and an indirect membership of over 365,000 enterprises from 294 national and regional sectoral industry bodies.

For more than 125 years, CII has been engaged in shaping India's development journey and works proactively on transforming Indian Industry's engagement in national development. CII charts change by working closely with Government on policy issues, interfacing with thought leaders, and enhancing efficiency, competitiveness, and business opportunities for industry through a range of specialized services and strategic global linkages. It also provides a platform for consensus-building and networking on key issues.

Through its dedicated Centres of Excellence and Industry competitiveness initiatives, promotion of innovation and technology adoption, and partnerships for sustainability, CII plays a transformative part in shaping the future of the nation. Extending its agenda beyond business, CII assists industry to identify and execute corporate citizenship programmes across diverse domains including affirmative action, livelihoods, diversity management, skill development, empowerment of women, and sustainable development, to name a few.

For 2024-25, CII has identified "Globally Competitive India: Partnerships for Sustainable and Inclusive Growth" as its Theme, prioritizing 5 key pillars. During the year, it would align its initiatives and activities to facilitate strategic actions for driving India's global competitiveness and growth through a robust and resilient Indian industry.

With 70 offices, including 12 Centres of Excellence, in India, and 8 overseas offices in Australia, Egypt, Germany, Indonesia, Singapore, UAE, UK, and USA, as well as institutional partnerships with about 300 counterpart organizations in almost 100 countries, CII serves as a reference point for Indian industry and the international business community.



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