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Experience to Enthusiasm

Driving Risk Awareness from the Shop Floor

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23 Oct 2019

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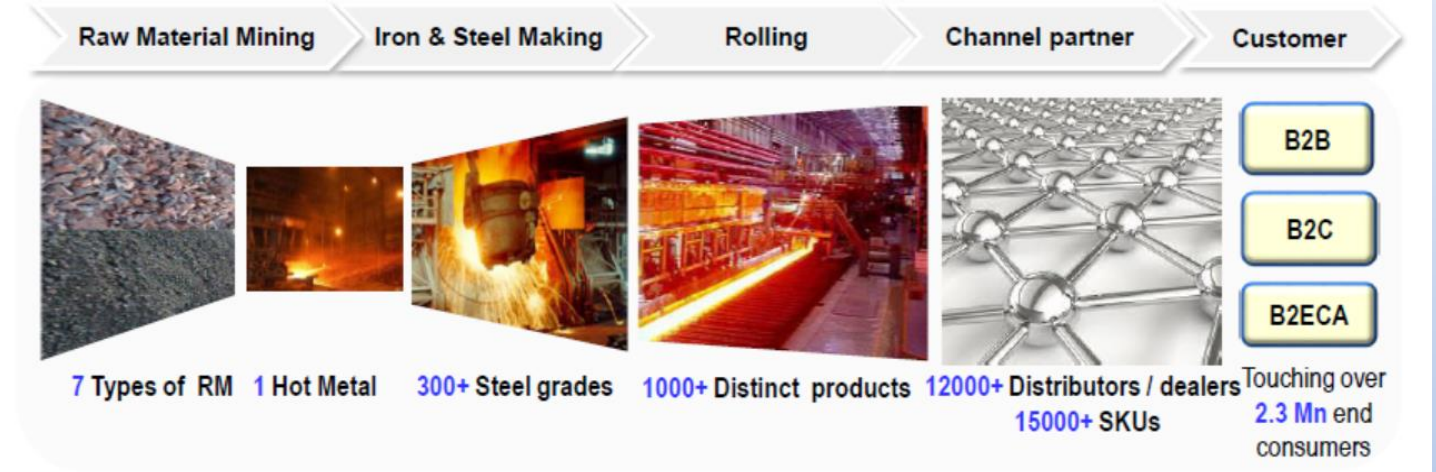
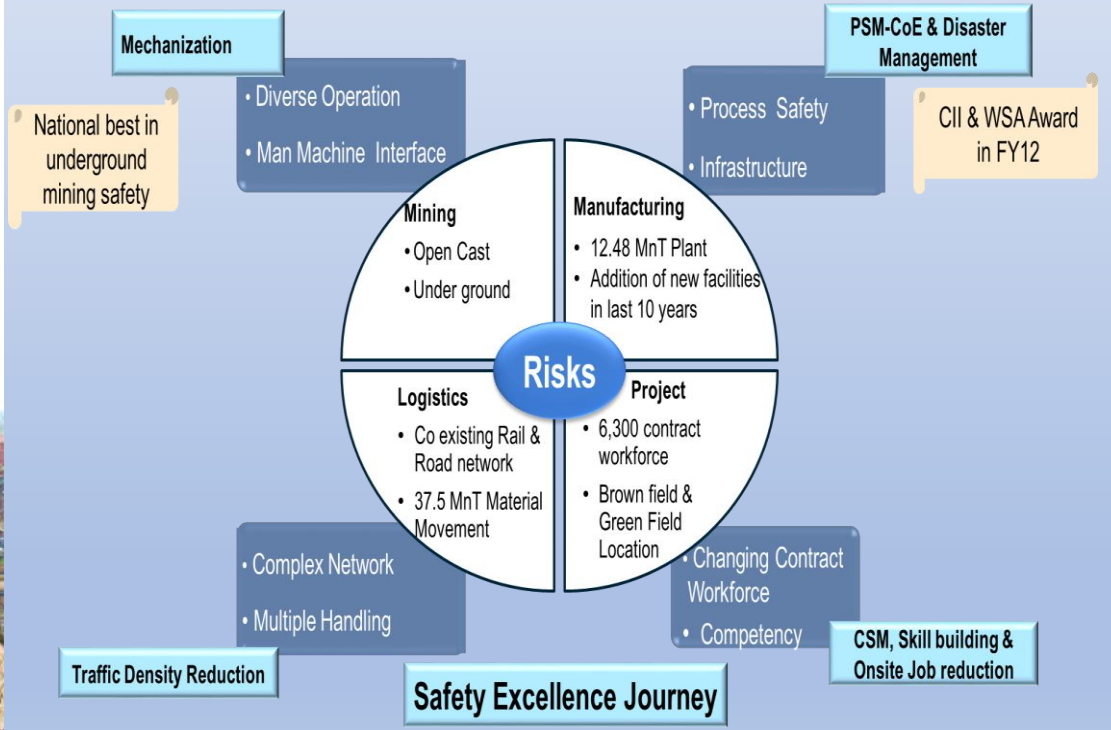
Tata Steel Limited, Kalinganagar Steel Plant





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Our Vision & Belief

Vision

We aspire to be the global steel industry benchmark for Value Creation and Corporate Citizenship.

Belief

The Safety and health of all the people who work in and work with Tata Steel group is our number one priority

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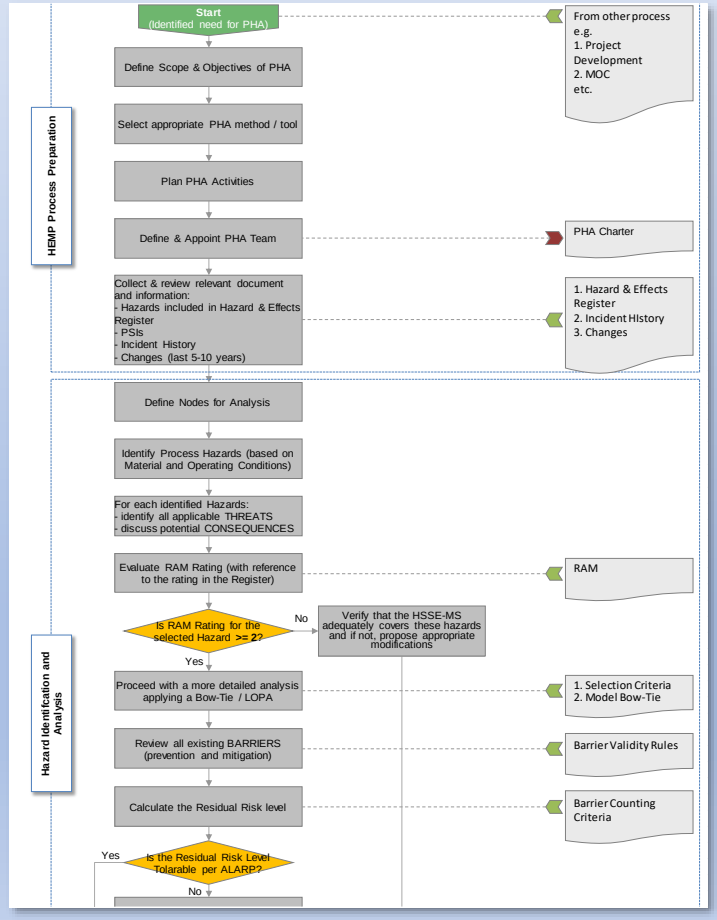
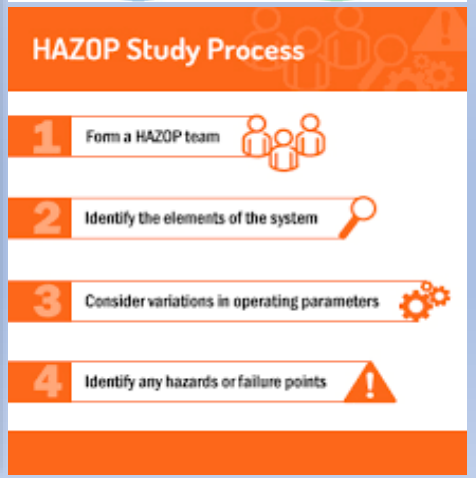
Embarking on a Holistic Process Safety Risk Management Journey





F-1	3	2	2	1	1
F-2	3	3	2	1	1
F-3	4	3	3	2	1
F-4	4	3	3	3	2
F-5	4	4	4	3	3
	C-1	C-2	C-3	C-4	C-5

Involvement of Contractors and treating them as own employees

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Active Worker Participation Leading to a Vibrant Organization

- **Worker empowerment**
- **Management responsiveness**
- **Improved process safety performance**

Compliment our ongoing risk assessments by a more continuous view of risks by tapping into the perspectives and experiences of our frontline employees

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First-of-its-kind Shopfloor Driven Risk Assessment Model

DuPont Sustainable Solutions

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Bringing a Large, Diverse, Young Workforce into Alignment

Safe Work Practices

Operational Discipline

Perceptions of Risk

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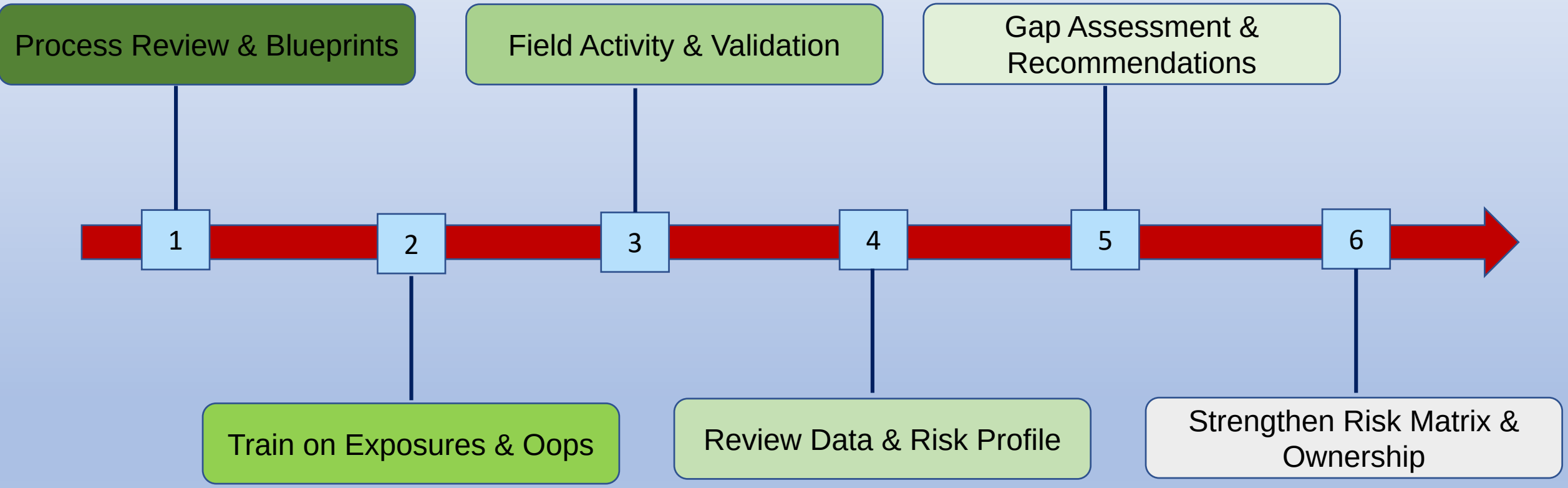
High Level Approach



Risk Profiling is a Ground-up Approach

UNUSUAL

UNEXPECTED

UNDESIRABLE

Risk Profiling estimates the potential for risk

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From Experience to Enthusiasm

A unique “A day in your life” approach helps bring out potential incidents and scenarios waiting to happen through structured interactions & engagements

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Proactively Highlighting Risks and Taking Ownership

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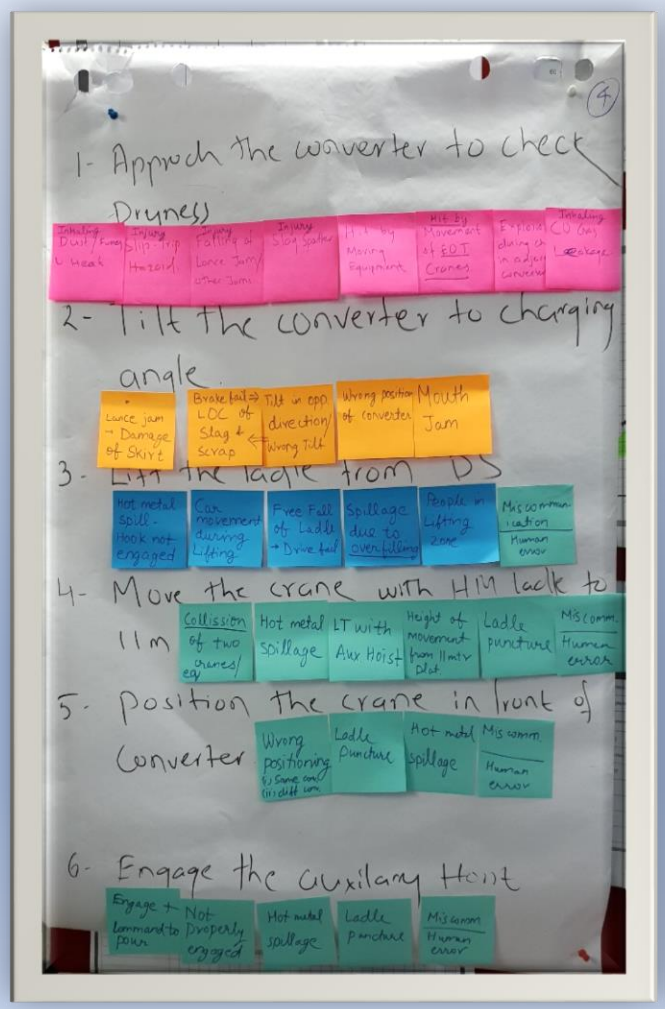
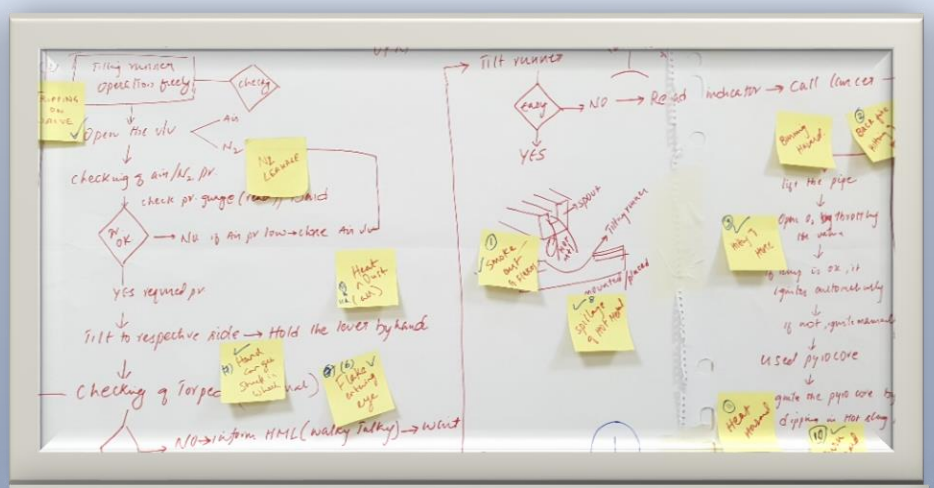
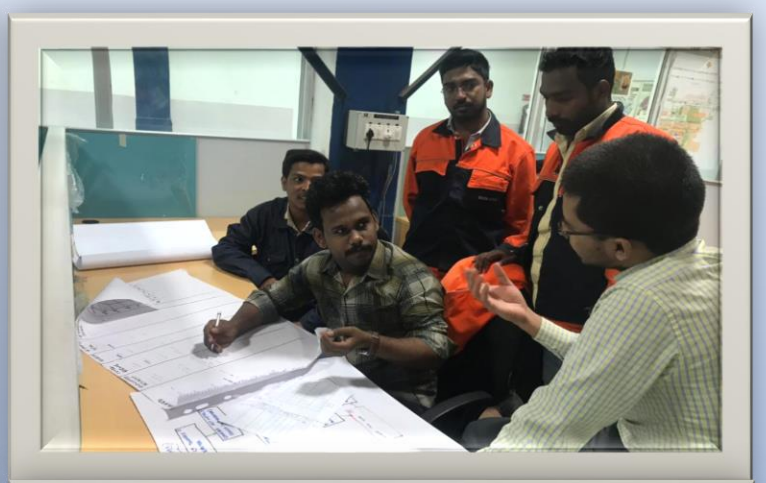
Risk Sensitization through Structured Interactions







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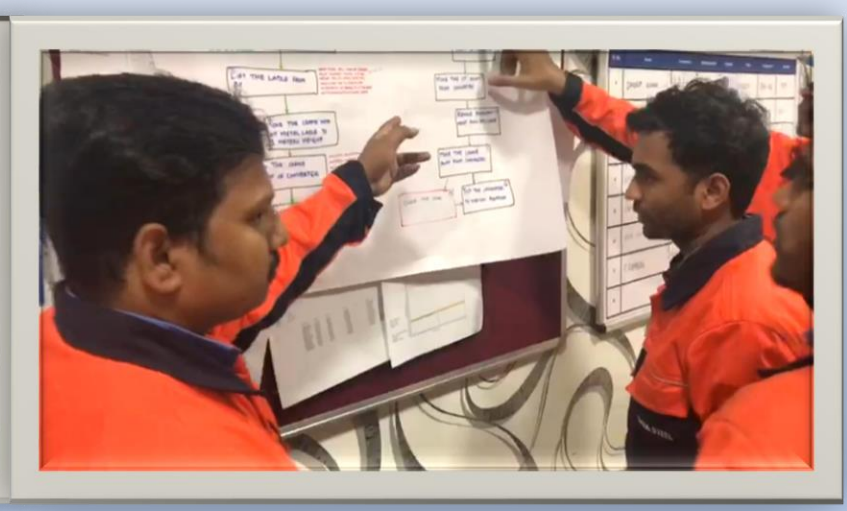
Creating a Platform for Meaningful Discussions



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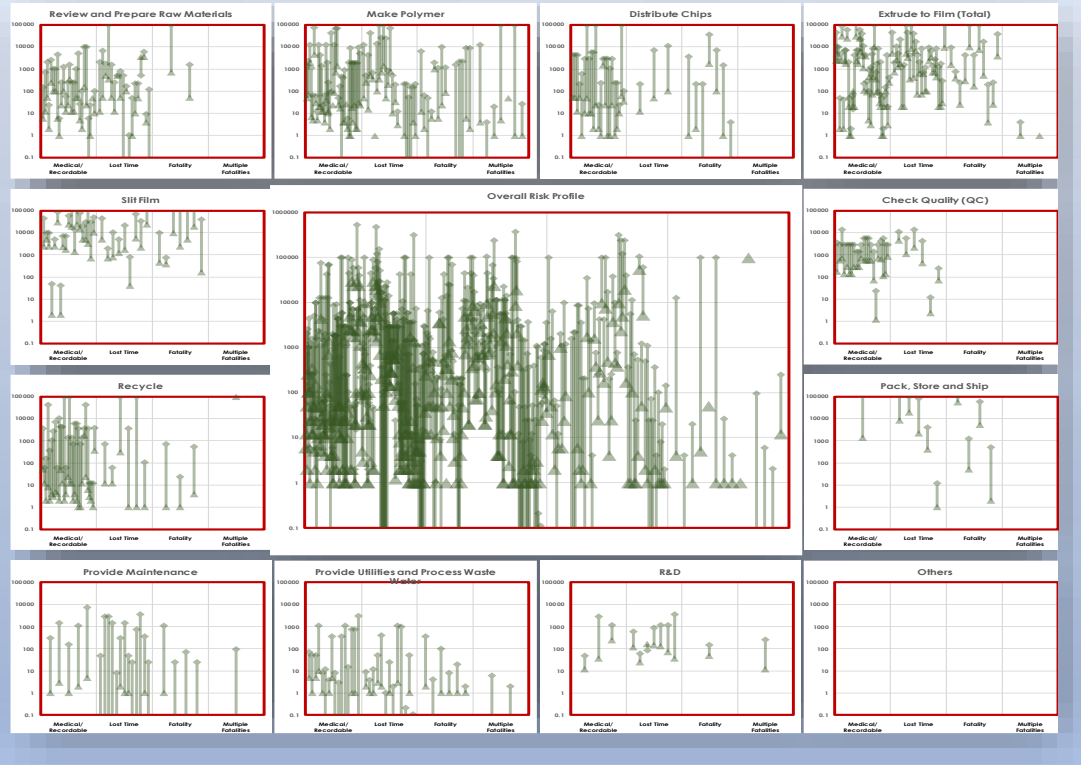
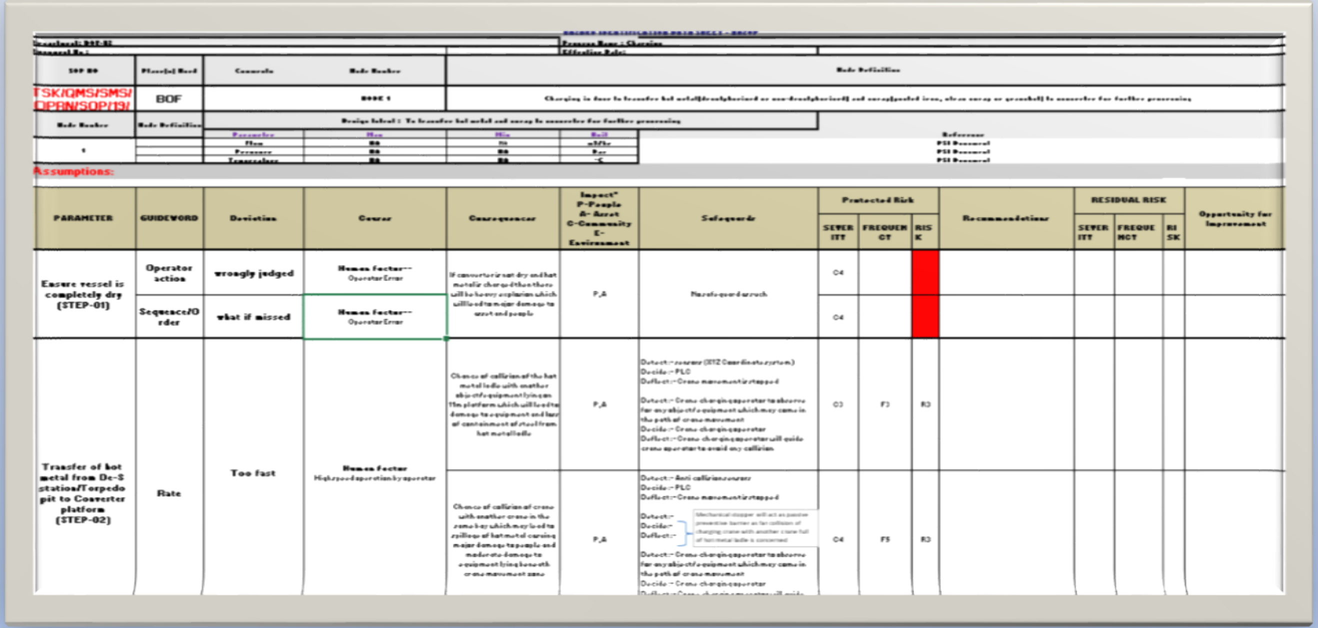
Risks and Threats Analyzed Beyond Safety

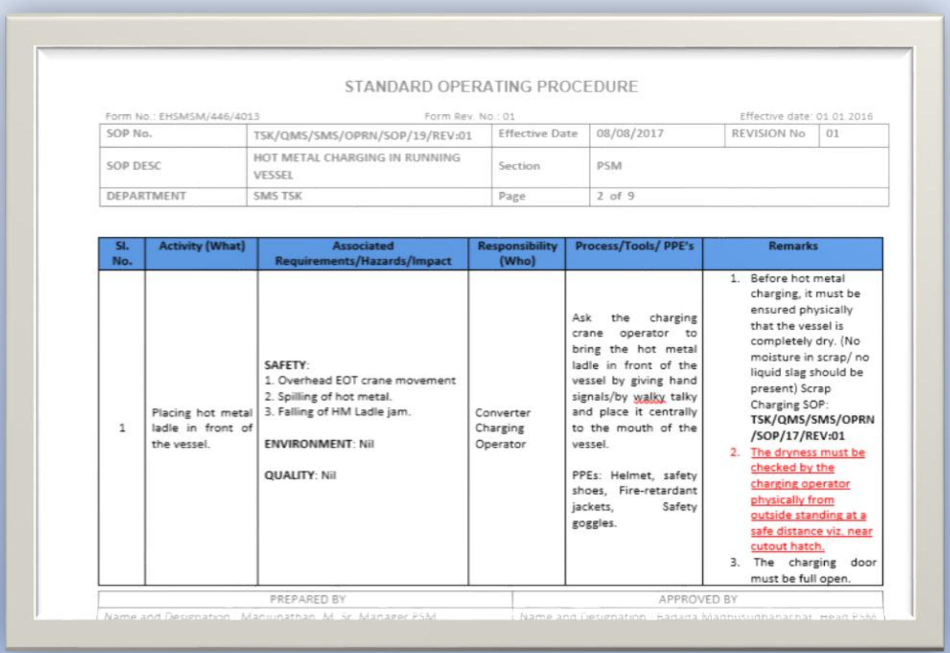


Likelihood						
	F1 (Almost Certain)					I
	F2 (Likely)			II		
	F3 (Possible)		III			
	F4 (Un Likely)					
	F5 (Rare)	IV				
		C1	C2	C3	C4	C5
Consequence						
People		No injury /Local Offsite Treatment	Monir Injury / Health Effect	Major injury or Reversible health effect	Single Fatal / Irreversible health effect	Multiple Fatality / Irreversible health effect
Asset		Slight damage	Minor damage	Moderate damage	Major damage	Massive damage
Community		Slight impact	Limited impact	Considerable impact	National impact	International impact
Environment		No Effect / Slight Effect	Minor Effect	Moderate Effect	Major Effect	Massive Effect

- The **Horizontal axis** represents increasing **Consequences** and each of the identified consequences assess the **severity (C1 to C5)** in the four **consequence categories - People, Asset, Community and Environment** (P, A, C, E) going beyond just safety
- The **vertical axis** represents increasing **Likelihood** (levels F1 to F5) **of the Consequence**

Playing a Critical Role in Gap Assessment & Recommendations





STANDARD OPERATING PROCEDURE

Form No.: EHSMSM/446/4013 | Form Rev. No.: 01 | Effective date: 01.01.2016

SOP No.	TSK/QMS/SMS/OPRN/SOP/19/REV:01	Effective Date	08/08/2017	REVISION No	01
SOP DESC	HOT METAL CHARGING IN RUNNING VESSEL	Section	PSM		
DEPARTMENT	SMS TSK	Page	2 of 9		

Sl. No.	Activity (What)	Associated Requirements/Hazards/Impact	Responsibility (Who)	Process/Tools/ PPE's	Remarks
1	Placing hot metal ladle in front of the vessel.	**SAFETY**: 1. Overhead EOT crane movement 2. Spilling of hot metal. 3. Falling of HM Ladle jam. **ENVIRONMENT**: Nil **QUALITY**: Nil	Converter Charging Operator	Ask the charging crane operator to bring the hot metal ladle in front of the vessel by giving hand signals/by walky talky and place it centrally to the mouth of the vessel. PPEs: Helmet, safety shoes, Fire-retardant jackets, Safety goggles.	1. Before hot metal charging, it must be ensured physically that the vessel is completely dry. (No moisture in scrap/ no liquid slag should be present) Scrap Charging SOP: **TSK/QMS/SMS/OPRN/SOP/17/REV:01** 2. The dryness must be checked by the charging operator physically from outside standing at a safe distance viz. near cutout hatch. 3. The charging door must be full open.

PREPARED BY	APPROVED BY

Not many organizations engage their shopfloor employees in a structured manner, empower them to speak up and hear them out. We made the difference.

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What makes this approach so Unique?

We developed a sense of risk thinking now

We feel empowered to talk about the not so obvious risks too now

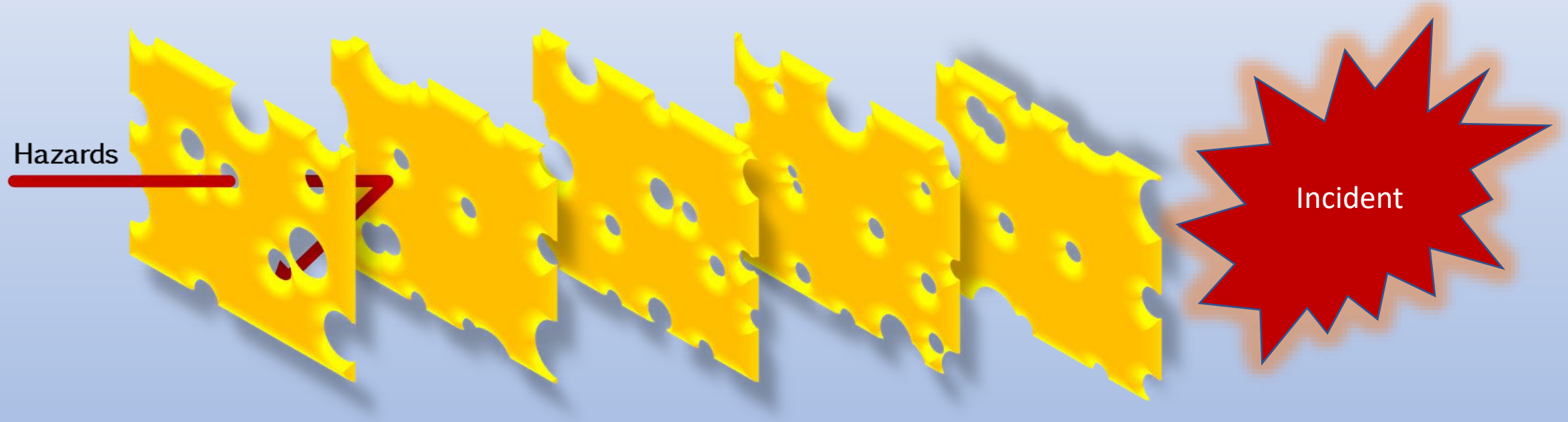
We never realized before this program that we are exposed to such high hazard levels! The calculations blew our mind & our perception of risk

OOPS gives us a good explanation of how risk taking has become a habit for us

This would avoid forced agreements of compulsion and move to conviction

We are getting more recommendations from Risk Profiling from a large number of people on ground

Critical layers of protection



Make the frontline personnel envision themselves as a critical layer of protection

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Outcomes & Benefits

- Effectively refreshed a large workforce in a wide range of activities, building capability and competency while decreasing anxiety
- Comprehensive Risk register covering most of routine & non routine activities
- Common understanding of risks and stronger culture of hazard awareness and Risk appreciation

- Identified gaps in operational discipline and activities missing from existing SOPs
- Creating an active and continuously evolving dialogue among and between operators and line managers to identify and appreciate high risks
- Enable meaningful cultural transformation at the organization level, top-down & bottom-up

'Vocal', 'confident', 'enthusiastic' and 'risk aware' workforce making for a dynamic organization with vibrant management systems

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