GEY



BEST PRACTICES IN SHE

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KEY INITIATIVES



- Implementation of DuPont Safety Model
- 16- processes and its defined
 KPM -> KPIs -> KAIs and
 linked with individual KRAs
- Develop and deployment of 19 safety standards
- Regular Audit & training on Safety standard



AREA IMPLEMENTATION COMMITTEES # 1,2,3,4 & 5

SAFETY TRAINING FOR EMPLOYEE & CONTRACTOR EMPLOYEE





Online gate pass system





Out Comes:

- 100% statutory compliance like valid job order, valid insurance, valid labour license, valid Aadhr or voter Id, valid health check-up, compliance of Form 11, mandatory induction training ang Biometric, etc
- Elimination of tempering of gate pass
- 100% prevention of unauthorised entry
- Any one can obtain gate pass from any where within country
- Reduction of Risk and saving of time

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🖳 Enter Mock Drill De	letails															×	Bei	netits: 100% a	ccess	to em	plove
Emerg. Scenario Department Place. Plan Date. Cond. Date. Cond. Time. Agen. Present.	Select SAFETY 07-02-19		Fi In E E C	mergency S nternal Obs ixternal Obs merg. Time ordoning of merg. Alarn st Resp. Re	Scenario De server Name server Nam Declaratior f Area. m Sounded.	esc. e. ne. 1	6:10 PM 🔄 ▼ 6:10 PM 🔄			Time of All C Previous Tot Total Time E Strength	lear. :al Time. lapsed.	16:10 PM	Minutes Minutes	cit			•	& Co-er Auto escalati 100% data	nploye remi on sys trackin like	e nder tem g of	ar safe safe
Emerg. Dept Scn. Dept Fire SAFET	Place Y Near HSD t porting Sequent	Date 17-12-2018 ce of Activies	Time 15:20 PM s Scope F(Agen. Prsnt. CTL & team or Improvi	Emerg. Sit. There was ment	Obs. Int Mr. T.M.	Obs. Ext. Da Mr. U.C.	Emerg, Time Sut 15:20 PM	Cord. Area Yes	Emerg. Alarm Yes	Fst. Resp 15:20 PM	All Clr. 15:27 PM	Prv. Time 7	Elp, Tíme 7	Strength All the team			observa Mock HIRA, perform employ	ition, drill, S SO nance ees	Near Safety P, &	mis aud safe c
Mockdrill Ref. N Activity Desc.		Time of Info	•	T	ime of Rpt.		Time Of I	Info. 16:10 P Rpt. 16:10 P Lapse	M	Lapses informed By. Info	р. Ву		itand. Time Stand.	Save (ancel			employ violatio	ees, ns,	depar	safe tmen
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Safety Activity Master Near Miss D	etail Incidence Analysis Master I	Mock Drill	HIRA Safet	y Audit Observati	on Review	/s Manage	e Safety Task	Safety Performace Details	Exit
om Date 02-04-2018 🗐 🔻 To Date	31-01-2019 🔲 👻 Department Name	POWER	PLANT		- [Show			
	AA. A⊕ -								
in Report									
		Deaprti	nent wise	safety summa	r y				
		From	02-04-2018	To 31-01-2019					
		-					the second stress if	Т	
	Deaprtment POWER PLANT			Officer 7	Associate	30	Mark= (Closed/Asgn)		
	Description	Officer	Associate	Compliance	Assigned	Closed	*100		
	Safety Visit Planned	126	1/8	Safety. Obs. Task	80	90	96.00	-	
	Safety Visit Actual	138	212	NearMiss CAPA	1	1	100.00	_	
	Safe Obs Point	526	623	CAPA of Incident	3	3	100.00		
	Total Safe Act Point	81	93	MD Scope for Impv	. 4	4	100.00		
	Safe Condition Point	95	57	Incident in Dept. (N	Nos)	Nos	Mark=Nos* mark	_	
	Unsafe Act Point	31	45	NearMiss(Serious/F	atal Potn.)	0	100.00		
	Unsafe Condition Point	319	428	No of LTI		0	100.00		
	Minor Injury Point	294	414	No of First Aid		1	(100.00)		
	Serious Injury Point	49	45	No of Fatality		0	100.00		
	Fatality Potn. Point	0	0	No of Road Incident	t	0	100.00		
		Reported	Analysed	No of Fire Incident		0	100.00		
	NearMiss Reported/Analysec	3	1	Total Score Out of 1	1000 Marks		796.55		
	Incident Rept/ Analysed	1	1	if I TI 200 -	N.B.	unted Eatal EX	d will be		
	No of Mockdrill Conducted	3	3	deducted Firstaid Roa	d Incident.Fire Ir	ncident -100 mar	k will be deducted		

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TATA STEEL LONG PRODUCTS LIMITED INNOVATION- FIRST AID TREE





First aid tree shows first aid free man hrs.



First aid tree grow without first aid



First aid tree fall due to first aid case

REDUCE REPEATED NATURE OF UNSAFE ACT

& CONDITION



Problem statement::



- 60% observations are reported missing guard from the conveyor
- This was happened due to not fixing the guard after maintenance and housekeeping
- Always there was a threat of an incident during running of the conveyor
- One serious potential Near miss had occurred due to the problem
- Violation of statutory requirement as per Act and Rules

Key benefits::



- 100% conveyor guards are tied with chain lock
- Flash light provision are made to show the running indication of the conveyor
- Miss place of guards are completely eliminated
- 100% comply the statutory requirement
- Unwanted incidents in conveyors are completely eradicated
- Moral of the employee is high

Risk reduction by installing hydraulic facility in wet

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scrapper



Problem Statement

During any Breakdown in wet scrapper like Chain Snap or heavy material accumulation in the wet scrapper due to PCC Ash Collapse, it is required to fix the dummy plate in its position. During fixing of the dummy plate by chain block and crowbar, there is a possibility of person exposure to hot Flue gas of Around 10000c and hot material fall on the human body, resulting serious burning injury. To execute the job, minimum 3 to 4 persons are required to push the dummy plate.

Risk assessment Score=36

[Scale(2)severity(3)x Probability (3)X Detectability (1)x Duration(2)=36]



Hydraulic Gate Arrangement: Hydraulic Cylinder assembly to insert and retract the Dummy Plate without any manual intervention

Result:



Reduction in risk by changing design of feed tray





BEFORE



Fi Process Flow Diagram of Sponge Iron Production Facility and Transfer Chute (Flap Gate) area

- Feed Tray Normally weighs 8 to 10MT. During shut down It is required to open the feed tray for fast cooling of Kiln shell and dumping of loose material. So it is done manually through chain blocks
- It normally takes 16hrs for 8 man-power in total for opening and closing the feed tray once in every shut down

Risk assessment Score=81

Scale (3) X Severity (3) X Probability (3) X Detectability (1) X Duration (3) = 81

AFTER



Feed Tray arrangement

Hydraulic Flap gate

- Camera Provided near the Transfer Chute at suitable distance for from Flap gate to keep a close control on Opening condition of flap gate without any human intervention at the area.
- Display provided at Control desk in control room.
- Additional Operating facility through Remote Controller from Control room provided to prevent uncontrolled opening of flap gate.
- HIRA and Subsequently SOP modified and People are trained.
- SAB tubes material compositions upgraded with the help of NML, JSR



Installed Camera

Risk assessment Score=6

Scale (1) X Severity (3) X Probability (1) X Detectability (1) X Duration (2) = 6

Human expose to risk reduce by Kiln Operation through Dynamic Model





13

Reduction of Human exposure during Kiln shutdown Maintenance



Before

- In every shut down, It normally takes 8-10 days and man power approx. 70-80 involved to complete the activity
- Hazardous activities like, cutting of accretion, Winching of big chunks by manual operated winch machine etc. are going on where the probability of sudden dislodge of accretion piece and winch rope hit to the person may lead to fatal/serious incidents.



After



Risk reduction by installing direct loading facility of

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sponge Iron into container







- Thermography photographs available in control room operator desk all time.
- Operators are taking action of process parameters to minimize respective area accretion buildup.

Risk reduction by installing Acid & Caustic storage

tank

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- Manually Acid barrel were transforming from the chemical storage room to DM plant by two person
- Also the activity carried out to feed acid into the acid measuring tank manually by a person.
- Always there was fear to spill of chemical on the ground and also risk to human for exposing to acid
- Risk assessment score: Scale (2) X Severity (3) X Probability (3) X Detectability (2) X Duration (2) = 72

- Acid & Caustic lie storage Tank installed
- Acid & Caustic lie transfer from acid tanker to acid storage tank and subsequently transform to acid measuring tank through pipe.
- Manually activity is completely eliminated and risk reduce to acceptable limit.
- Risk assessment score: Scale (1) X Severity (1) X Probability (3) X Detectability (2) X Duration (2) = 12

Risk reduce by Reducing boiler tube failure to zero for last 2 years





Before

- Whenever Boiler tube got ruptured, It takes minimum 5days 1. to restore and minimum 15 person are involve in this activity.
- 2. Person are working in confined space, work at height and expose to high risk.



1. Motorized isolation valve installed in between root valve & PCV and Motorized valves installed in individual drain lines.

2. Temperature sensors provided in individual lines. System can be operated from PLC without manual intervention.

3. Install the protection sleeve over the coils of economizer module just below the soot blower's lance tube. At high temp zone LRSV zone material protection sleeve changed from SS-304 to SS-310.

4. After completion of our action, we have found there is no incident of boiler tube failure for last 2 year which ultimately reduce the manual job in the boiler thus reduce the risk

Positive Isolation System





Fire Safety Management



- Identification of fire hazard
- Implementation determining control
- Provision of fire fighting equipment
- Fire hydrant system at all factory buildings, different floors as per TAC norms (Tariff Advisory Committee)
- Conductance of fire mock drill
- Audit/Inspection on fire
- Implementation findings/gaps



Road Safety Management



- Road Safety standard and its deployment
- Separate road for vehicle and pedestrian
- Alcohol checking & Speed monitoring
- Compulsory use of seat belt and crash helmet
- Provision of solar light and blinker at dividers
- Display of florescent road safety signage
- Restricted speed 20 km/hr.



Communication



Green cross

- First aid tree
- Safety Statistics board
- Red strip
- E-mail
- Auto mail
- Notice board
- Departmental meeting
- Tool box talk/Safety training



Making it happen

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When all elements are present, changes can take place When something is missing, the result is different



TATA STEEL LONG PRODUCTS LIMITED The opportunity gap





TATA STEEL LONG PRODUCTS LIMITED Motivation through Reward & Recognition



- Safety competition
- Safety Campaign
- Safety training
- Reward & Recognition
- Safety meetings
- Dept. meeting



Safety Quiz Competition



Safety Talk Competition



Safety Drama Competition



Poster competition among children



Service Providers Recognition



Instant Quiz competition



Safety Quiz Competition



Safe employee award

Safe Contractor-employee award

Waste to Wealth (Systematic Waste Management leading to



material recovery)



- Pollution load on Environment decreased and 15 acres land salvaged for plant expansion project
- Good reputation in the locality and govt officials
- Ccompany earned revenue from the waste

the statutory compliance

ENVIORNMENTAL INITIATIVES



- Plantation increase oxygen level
- Water harvesting from Roof (14000 KL) and Storm water (88000 KL), (7.5% water recharge to the ground)
- Solar power generate 235 kw
- Carbon utilization from waste and sold to the AFBC power plant, oil refinery and domestic utilization
- Reduce of waste generation from 680 kg to 453 kg and coal from 1.2 to 0.908 per ton of sponge iron
- The local people benefitted by developing their low laying land through fly ash and develop echo friendly park for society and fruit garden
- Heat recovery from the kiln radiation and using in chilling plant for centralised air conditioning system







SAFETY & ENVIORNMENT PERFORMANACE



.....Journey Continue

TATA SPONGE IRON LIMITED

This is how we engage our people to pursue SHE Excellence, motivate them through R&R program (Sparkle Knight) and boost them for accepting future challenges.

