

WELCOME

**A PROACTIVE APPROACH TO SAFETY
MANAGEMENT SYSTEM IN RMD/SAIL**



A PROACTIVE APPROACH TO SAFETY MANAGEMENT SYSTEM AT RMD/SAIL

1. OVERVIEW OF RAW MATERIALS DIVISION OF SAIL :

a) AN UNIT OF SAIL

b) PRODUCE & SUPPLY IRON ORE, MANGANESE ORE, LIMESTONE, DOLOMITE TO CAPTIVE STEEL PLANTS OF SAIL.

2. MINES OF RMD:-

<u>NAME OF MINES</u>	<u>EXISTING CAPACITY (MT)</u>	<u>ENHANCED CAPACITY (MT)</u>
KIRIBURU IRON ORE MINE	4.25	05.50
MEGHAHATUBURU IRON ORE MINE	4.50	06.50
BOLANI ORE MINES	4.10	10.00
BARSUA IRON MINES	2.10	04.50
KALTA IRON MINE	0.80	02.00
MANOHARPUR ORE MINE	0.93	15.00
GUA ORE MINES	2.40	10.00
TULSIDAMAR DOLOMITE MINES	0.30	00.50
KUTESHWAR LIMESTONE MINES	1.30	02.00
BHAWANATHPUR LIMESTONE MINE	-	-
<u>MINES OF BSP:-</u>		
DALLI RAJHARA GROUP OF MINES	8.80	14.00
NANDINI LIMESTONE MINE		
HIRRI DOLOMITE MINE		

3. SAFETY POLICY OF SAIL:-

Steel Authority of India Limited (SAIL) is committed to:

- Safety of its employees and the people associated with it including those living in the neighbourhood of its plants, mines and units.
- Pursue safety efforts in a sustained and consistent way by establishing safety goals, demanding accountability for safety performance and providing resources to make safety programmes work.

GUIDING PRINCIPLES

- Excellence in health & safety supports excellent business results.
- All accidents can and must be prevented.
- All employees are responsible and accountable for maintaining safety standards.
- Safety standards to be incorporated in all work procedures.
- Imparting training to create safety consciousness and to work safely to be key elements of safety programmes.
- Safety to be enhanced through participative committees and other fora.
- Comprehensive and regular audit of the safety performance, to be conducted.
- All work practices & procedures to be in consonance with statutory Rules and Regulation on safety.

4. VISION:-

a) ZERO HARM to anyone anywhere.

TARGET:- b) RLTI FR (REPORTABLE LOSS TIME INJURY FREQUENCY RATE):-

FOR THE YEAR 2015-16 :- 0.25

$$\text{RLTI FR} = \frac{\text{Nos. of reportable cases} \times 10^6}{\text{Man hours worked}}$$

SAFETY MANAGEMENT STRUCTURE:-

A) CORPORATE LEVEL (NEW DELHI) HEADED BY CHAIRMAN :-

1. BOARD SUB COMMITTEE FOR SAFETY HEALTH & ENVIRONMENT: -

(CONSISTS OF REGULAR DIRECTORS AND ONE INDEPENDENT DIRECTORS AS CHAIRMAN OF THE COMMITTEE).

FRAMING POLICY, DIRECTION, FRAMING RULES, PRINCIPLES, GUIDELINES

2. SAIL SAFETY ORGANISATION (RANCHI) HEADED BY DIRECTOR (TECHNICAL) FOR ALL UNITS OF SAIL : -

PREPARES SAFETY PROTOCOL, IMPLEMENTATION OF SAFETY POLICY, DIRECTION ABOUT NEW SAFETY GUIDELINES, AUDITING, ACCIDENT ANALYSIS AND IMPLEMENTING CORRECTIVE MEASURES, MONITORING AND COORDINATING HEADS OF SAFETY OF DIFFERENT UNITS.

ORGANISE DRIVES AND CAMPAIGNS.

3. JCSSI: -

BIPARTITE BODY BETWEEN MANAGEMENT AND NATIONAL LEVEL TRADE UNIONS FOR TAKING DECISION ON SAFETY HEALTH AND ENVIRONMENT IN STEEL PLANTS.

B) HEAD QUARTER LEVEL AT RMD (KOLKATA) HEADED BY ED I/C (RMD):-

1. REVIEW
2. INTERNAL AUDITING (MINING , MECHANICAL , PLANT , ELECTRICAL)
3. THIRD PARTY AUDIT FOLLOWED BY RISK ASSESSMENT AND RISK MANAGEMENT AS PER DGMS GUIDELINES FOR COMPLETE OH&S.
4. MONITORING OF COMPLIANCE OF STATUTORY OBSERVATIONS
5. TRIPARTITE MEETING
6. BIPARTITE MEETING
7. SAFETY PROVISION IN EQUIPMENT, TECHNOLOGY, ENGINEERING IN CASE OF NEW INSTALLATION OR PROCUREMENT

C) MINES LEVEL HEADED BY GM(MINES):-

1. FUNCTIONING OF SAFETY COMMITTEE
2. IMPLEMENTATION OF CIRCULARS & RECOMMENDATIONS OF CONFERANCES
3. IMPLEMENTATION OF OBSERVATIONS OF STATUTORY AUTHORITY
4. IMPLEMENTATION OF AUDIT REPORT
5. TRAINING (STATUTORY , SKILL DEVELOPMENT , AWARENESS , MANAGERIAL , TECHNICAL , HEALTH & ENVIRONMENTAL , FIRE MANAGEMENT , OH&S ,ISO 9001 & 14001 , OSHAS , WORKSHOP, ETC.)
6. WORKSHOP ON LEO
7. IMPLEMENTATION THROUGH ACTION TAKEN REPORT
8. DEVELOPING AWARENESS ON FIRE AND SAFETY MANAGEMENT SYSTEM
9. USE OF SAFETY PROTOCOL , SOP, SMP ,JOB SAFETY ANALYSIS
10. INCIDENT ANALYSIS.
11. SPECIAL INITIATIVES(FIRE SURVEY,RELAY CENTRE,AWARENESS , DIRECTIVES , CONTRACTOR SAFETY & TRANSFORMATION OF CULTURE, HABITS & BEHAVIOR)

6. IMPLEMENTATION OF SAFETY STANDARD ACTS AND PRACTICES:-

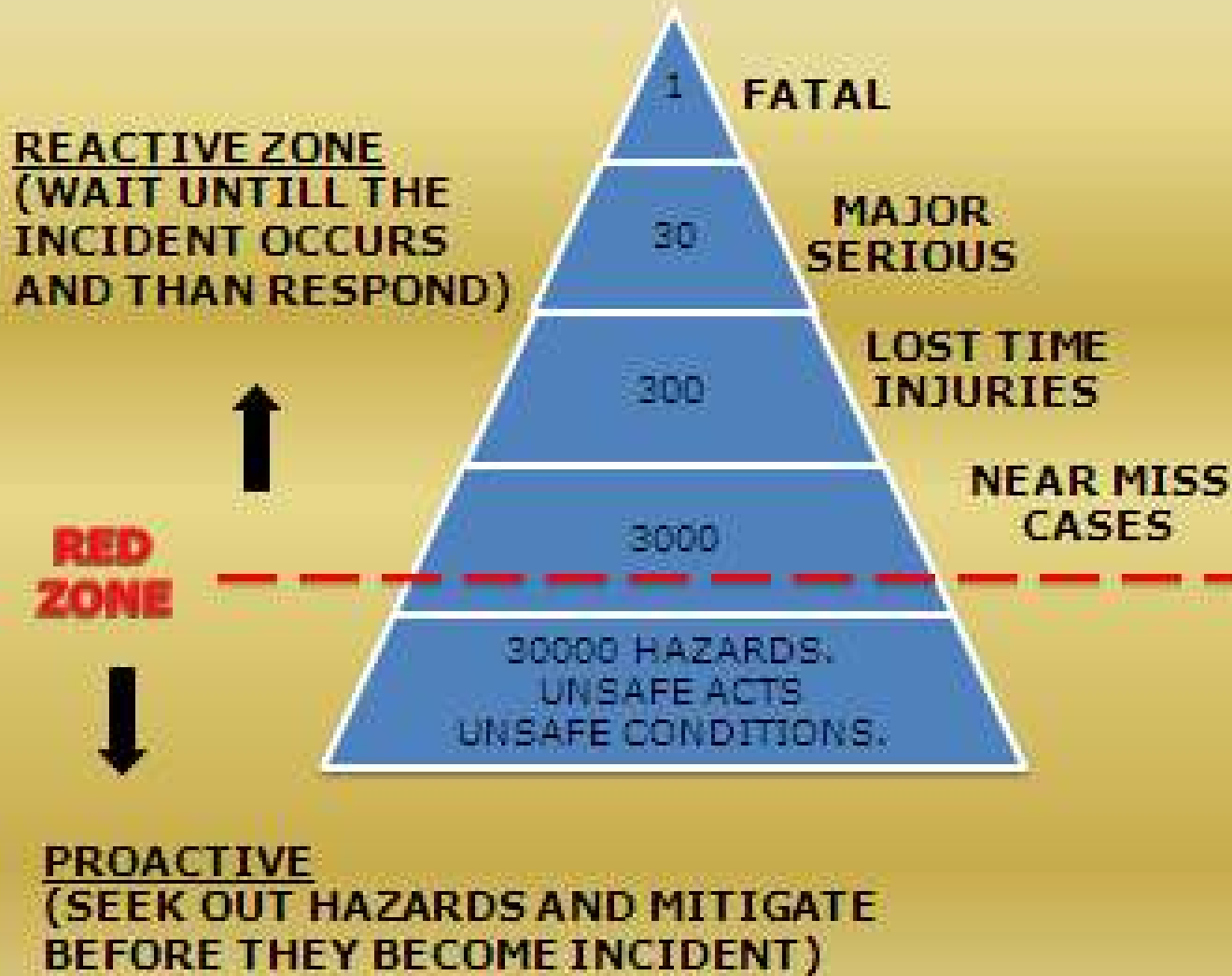
A) THROUGH PREPARATION OF ACTION TAKEN REPORT AND IMPLEMENTATION PLAN ON THE FINDINGS/OBSERVATIONS/ RECOMMENDATIONS OF:

- ❖ **THIRD PARTY AUDIT**
- ❖ **INTERNAL AUDIT**
- ❖ **COMMENTS OF STATUTORY AUTHORITIES**
- ❖ **IMBIBE SYSTEMATIC PROCESS**

B)RISK ASSESSMENT AND RISK MANAGEMENT IMPLEMENTATION



HAZARD MANAGEMENT





सल SAIL
A Maharatna Company

HAZARD MANAGEMENT

STEPS: -

1. IDENTIFYING THE HAZARD

Whichever can cause harm or illness.

2. ASSESS THE RISK

How likely is the incident going to occur which will result in the injury or illness.

3. CONTROL THE RISK

What must we do make the work safer.

4. ASSESS THE RESIDUAL RISK

a) INTOLERABLE RISK----- TO MITIGATE FURTHER

b) Tolerable RISK-----PPE









SCALES OF CONSEQUENCE PROBABILITY & EXPOSURE
(AS PER DGMS)

<i>Sl. No</i>	<i>CONSEQUENCE</i>	<i>SCALE</i>	<i>PROBABILITY</i>	<i>SCALE</i>	<i>EXPOSURE</i>	<i>SCALE</i>
1.	SEVERAL DEAD	5	MAY WELL BE EXPECTED	10	CONTINUOUS	10
2.	ONE DEAD	1	QUITE POSSIBLE	7	FREQUENT(DAILY)	5
3.	SIGNIFICANT CHANCE OF FATALITY	0.3	UNUSUAL BUT POSSIBLE	3	SELDOM(WEEKLY)	3
4.	ONE PERMANENT DISABILITY	0.1	ONLY REMOTELY POSSIBLE	2	UNUSUAL (MONTHLY)	2.5
5.	MANY LOST TIME INJURY	0.01	CONCEIVABLE BUT UNLIKELY	1	OCCASSIONAL(YEARLY)	2
6.	ONE LOST TIME INJURY	0.001	PRACTICALLY	0.5	ONCE IN 5 YEARS	1.5
7.	SMALL INJURY	0.0001	VIRTUALLY IMPOSSIBLE	0.1	ONCE IN 10 YEARS	0.5
8.					ONCE IN 100 YEARS	0.02

HAZARD, RISK ASSESSMENT AND RANKING (AS PER DGMS)

NOTE: RISK RHAVING 30 OR MORE ARE DEALT FIRST AS TOP RANKING RISK

<u>Sl.No.</u>	<u>TYPE OF HAZARD</u>	<u>CONSEQUENCE</u>	<u>PROBABILITY</u>	<u>EXPOSURE</u>	<u>RISK SCORE</u>	<u>RISK RANK</u>
1.	MACHINERY	5	7	5	175	I
2.	ORE PROCESSING PLANT	5	7	5	175	I
3.	SHORTAGE OF SKILLED PERSON & DEPLOYMENT OF UNSKILLED PERSON	5	7	5	175	
4.	PIT SLOPE FAILURE	5	3	10	150	I
5.	EXPLOSIVE & BLASTING	5	7	3	105	II
6.	MECHANICAL LOADING OF WAGONS AT THE SIDING	5	2	10	100	III
7.	DUMPING OF WASTE ROCK	5	3	5	75	
8.	LACK OF AWARENESS	1	3	10	30	IV
9.	UNAUTHORISED ENTRY AT HAZARDOUS OPERATIONS	0.3	7	5	10.5	V
10.	POOR SUPERVISION	0.3	7	5	10.5	VI
11.	IMPROPER SURVEYING	0.3	7	5	10.5	
12.	FIRES	0.3	7	5	10.5	VII
13.	ENVIRONMENTAL ISSUES	0.3	3	10	9	VII
14.	INADEQUATE TRAINING FACILITIES	0.3	2	10	6	VII
15.	OCCUPATIONAL HEALTH	0.3	1	10	3	VII
16.	INNUNDATION	0.3	0.1	2	0.06	VIII

RISK TREATMENT IMPLEMENTATION PLAN

MECHANISM	EXISTING CONTROL	RELEVANT STATUTE	TREATMENT OPTION	PROPOSED PROCEDURE	LIKELY COMPLETION PERIOD	RESPONSIBILITY

ATR ON THIRD PARTY AUDIT

NAME OF MINE	OBSERVATION	RECOMMENDATION	STATUS AS ON		LIKELY COMPLETION PERIOD	RESPONSIBILITY	MONITORING
			COMPLIED	IN PROCESS			
KIOM							
MIOM							
BOM							
GOM							
BIM							
KIM							
MOM							
KTR							
BNP/ TDMR							

7.SPECIAL INITIATIVES FOR FURTHER IMPROVEMENT

INITIATIVES :-

SLOPE STABILITY, VIBRATION , DUST, NOISE, HEALTH AND ENVIRONMENT, PROCESS SAFETY, Structural stability test, NDT, Relay Center, Fire survey etc.

DRIVES : Tool Box Safety Talk
 Provision of Double earthing
 Usage of ELCB
 Provision of Chicken Mesh Guard in Man Coolers
 Machine guarding & Barricading
 Road Safety
 Flash Back Arrestor in Gas cutting Sets & Cylinder

PROTOCOL : Working at Height
 Working in confined space
 Permit to Work
 Wagon Tippling
 Safe handling of liquid metal
 Safety in Contracts
 Welding and cutting
 Installation & use of barricading
 Electric hoist

8. CONCLUSION.

- IT IS A CONTINUOUS CIRCULAR MOTION (PLAN-DO-CHECK-ACT)
- SAFETY IS A WAY OF LIFE
- SAFETY IS EACH ONE'S RESPONSIBILITY
- IMPLEMENTATION OF SYSTEMATIC PROCESS (CULTURE, PRACTICE, HABITS, ATTITUDE DISCIPLINE AND UNIFY BEHAVIOUR WITH COMMITMENT AND CONVICTION)



BASIC RESPONSIBILITIES

The world we live in is never really safe ... research shows that it is the actions of people that determine whether injuries occur!

85% of incidents are due to UNSAFE ACTS by people, or due to the organization

Only 15% of incidents are due to UNSAFE CONDITIONS

HENCE
DON'T WALK PAST !!!
CREATE AWARENESS !!!

Source: l'Institut National de Recherche et de Sécurité (INRS) - France

A wide-angle photograph of a lush garden. In the foreground, a circular fountain with multiple jets of water is surrounded by a variety of colorful flowers, including yellow and orange blooms. A brick path winds through the garden, leading towards a large, arched greenhouse with a green cover. The greenhouse has a sign that reads "GREEN HOUSE". The garden is filled with various plants, including tall trees on the left and several large, rounded topiary bushes. The sky is a clear, bright blue.

THANK YOU

There's a little bit of SAIL in everybody's life

Fatal Accident at Bursua Iron Mine

Year 2015

Date of Fatal accident: 14th July 2015 at 11.20 AM
Category: Contractual Employee
Name : LATE KUSHAL KANDULNA

Accident:

Shri. Kushal Kandulna was on duty in the “A” Shift on 14/07/2015. He was engaged at conveyor no 57 for measuring the take up pulley size. He entered through the gap between stringent and walkway without taking proper shutdown. At the same time cleaning job at receiving end was going on for which at certain interval belt was being shifted from the local master switch. While Sri kandulna was standing on the pulley the belt was shifted as a result he was trapped between pulley and conveyor belt.

Fatal Accident at Bursua Iron Mine

Contd..

Immediate Cause of incidence:

- Caught between take up pulley and conveyor belt

Cause of accident:

Shut down procedure was not followed. Lack of communication. Simultaneous job of cleaning and maintenance. Lack of supervision. Non use of safety provision(pullcord).

Recommendations to prevent recurrences:

- Provision of ladder and platform below pulley.
- Positive isolation of conveyor belt while doing maintenance.
- Effective communication system.
- Relocation of pullcord switches near all the pulleys & drives.

**ACTION TAKEN REPORT ON ENQUIRY REPORT OF ACCIDENT ON CONVEYOR 57
AT BIM ON 14/07/2015 AT ABOUT 11:20 AM**

SL. NO.	RECOMMENDATION	ACTION TAKEN	TIME FRAME	RESPONSIBILITY	STATUS AS ON 26/08/2015
1.	PROVISION OF LADDER AND PLATFORM BELOW PULLEY.	ACTION TAKEN FOR INSTALLATION.	IMMEDIATE	DGM (Plant)	COMPLIED
2.	POSITIVE ISOLATION OF CONVEYOR BELT WHILE DOING MAINTENANCE.	ACTION TAKEN FOR LOCKING ARRANGEMENT	IMMEDIATE	DGM (Plant)	COMPLIED
3.	EFFECTIVE COMMUNICATION SYSTEM.	PA & WALKIE - TALKIE SYSTEM	IMMEDIATE	DGM (Plant)	COMPLIED
4.	RELOCATION OF PULL CORD SWITCHES NEAR ALL THE PULLEY AND DRIVE WITH ON /OFF INDICATOR.	NEW PULL CORD SWITCHES WITH INDICATOR	IMMEDIATE	DGM(Elect)	COMPLIED
5.	FITTING OF PULL CORD IN ALL CONVEYOR BELT.	ACTION TAKEN FOR PROCUREMENT	IMMEDIATE	DGM(Elect)	PARTLY COMPLIED
6.	SOP, SMP, HIRA IMPLEMENTATION.	ACTION TAKEN FOR IMPLEMENTATION	31/08/2015	DGM (Plant)	SOP, SMP IMPLEMENTED & HIRA IS UNDER PROCESS
7.	GUARD ALL ALONG THE CONVEYOR BELT.	INITIATIVE FOR PROCUREMENT	31/12/2015	DGM (Plant)	IN PROCESS
8.	FITTING OF HOOTER IN INDIVIDUAL BELT	PARTLY COMPLIED	31/08/2015	DGM (Plant)	PARTLY COMPLIED

Fatal Accidents at Meghahatuburu Iron Ore Mine

Year 2015

Date of Fatal accident:	12 th June 2015
Category:	Departmental Employee
Name :	Late Deep Narayan Mahato

Accident:

Shri. D. N. Mahato was on duty in the “B” Shift on 11/06/2015. He was injured in a Road accident (Hit by a reversing hired Bolero) at about 09:00 PM near the Loading Control Room. He was immediately taken to the mines Hospital & after giving initial treatment, he was referred to IGH, RKL for further treatment. On way to IGH he expired on 12/06/2015

Fatal Accident at Meghahatuburu Iron Ore Mine

Contd..

Immediate Cause of incidence:

- Hit by reversing hired Bolero

Cause of accident:

- Auto operation of horn / buzzer during reversal along with Light was not operated.

Recommendations to prevent recurrences:

- Auto operation of horn / buzzer during reversal in Light Motor Vehicle.
- SOP for driving Light Motor Vehicle in Mines.
- Skill development & awareness training.

**ACTION TAKEN REPORT ON ENQUIRY REPORT OF ACCIDENT NEAR
LOADING CONTROL ROOM ON 11/06/2015 AT ABOUT 09:00 PM AT
MIOM TURNED FATAL ON 12.06 2015**

SL. NO.	RECOMMENDATION	ACTION TAKEN	TIME FRAME	RESPONSIBILITY	STATUS AS ON 26/08/2015
1.	AUTO OPERATION OF HORN / BUZZER DURING REVERSAL IN LIGHT MOTOR VEHICLE.	FITTING OF AUTO OPERATION OF HORN / BUZZER IN LIGHT MOTOR VEHICLE.	30/06/2015	DGM (P&A) & DGM (MECH.)	COMPLIED
2.	SOP FOR DRIVING LIGHT MOTOR VEHICLE IN MINES	PREPARATION OF SOP, PASTING IN THE VEHICLE & COPY TO DRIVER WITH SAFETY AWARENESS TALK.	14/06/2015	DGM (MINES), DGM (P&A) SAFETY OFFICER	COMPLIED
3.	SKILL DEVELOPMENT & AWARENESS TRAINING.	AT RTC KIRIBURU	Immediate	DGM (BE& I/C RTC)	COMPLIED