Presenter Name: Jitendra Kumar

Paper name: Stabilization of RH degasser in SMS-III, Bhilai Steel Plant, SAIL

	PRESENT AFFILIATION	Bhilai Steel Plant, SAIL
	AREAS OF INTEREST	Steel Making, Games and Sports
	Education	B-Tech, Metallurgy
Experience	 BOF LD Converter Operation Secondary Refining Unit (LF, RH and VAD) Continuous Casting (Billet Caster, Bloom Caster and Slab Caster) Commissioning & Stabilization of BSP, SMS-II LF and RH Degasser Commissioning & Stabilization of BSP, SMS-III Bloom Caster, Billet Caster, Ladle Furnace and RH Degasser 	
Projects:	Development of Special Steel, e.g. EWNR, CAQ Grade-I & Grade-II, SWR10 etc.	
Publication/ Patent	NA	



Stabilization of RH Degasser in सेल SAIL SMS-III, Bhilai Steel Plant, SAIL



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BRIEF DESCRIPTION OF SMS-III, BSP

SMS-III BSP COMPRISES:

- > TWO HMDS UNITS
- > THREE LD BOF CONVERTER
- > THREE ARS
- > THREE LADLE FURNACES
- > ONE RH DEGASSER UNIT
- > TWO BILLET CASTERS
- > ONE BLOOM CUM BILLET CASTERS
- > ONE BEAM BLANK BLOOM CASTER



RH DEGASSER

WHAT IS A DEGASSER?

A DEGASSER IS A DEVICE USED TO REMOVE GASSES FROM LIQUID STEEL WHICH COULD OTHERWISE FORM BUBBLES WHICH MAY LEAD TO DEFECTS.

RH (RUHRSTHAL-HERAEUS) DEGASSER:

THIS PROCESS IS USED IN DEGASSING (REMOVING)

ENTRAPPED GASSES SUCH AS OXYGEN, NITROGEN AND HYDROGEN FROM LIQUID STEEL.



INTRODUCTION

- >SMS-3 PRODUCES RAIL STEEL THROUGH LF- RH ROUTE
- >THERE IS ONE RH UNIT WITH THREE VESSEL
- >THE WORKING CAPACITY IS 180/165 TONS
- >RH DEGASSER WAS COMMISSIONED ON 08.10.2019

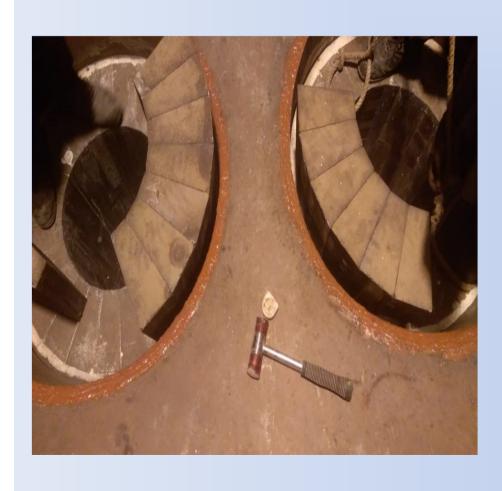


CONSTRAINT FACED DURING STABILIZATION

- >SELF-FLOW CASTABLE INPLACE OF RAMMING MASS
- > BRICKS CUTTING AS PER REQUIREMENT
- > IMPROVEMENT IN VESSEL WELDING WORK
- > MODIFICATION OF CONNECTING PLATE
- > DEGASSING TEMPERATURE REDUCED BY INCREASING CASTING SPEED
- > SLAG VOLUME CONTROL IN LADLE
- > MODIFICATION OF VESSEL TOP RELINING PATTERN



SELF-FLOW CASTABLE INPLACE OF RAMMING MASS







IMPROVEMENT IN VESSEL WELDING WORK

> STARTING UT TEST

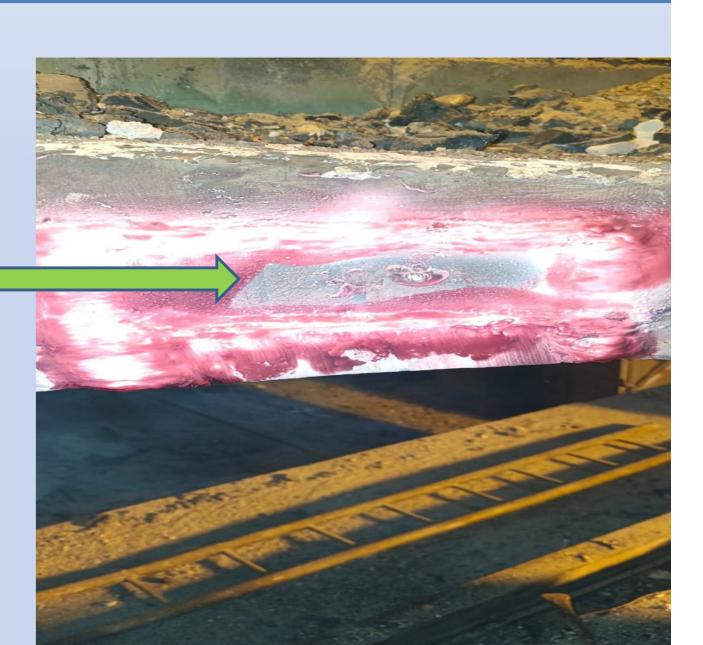
> DP TEST FROM LAST TWO YEARS

> USE OF LH ELECTRODE



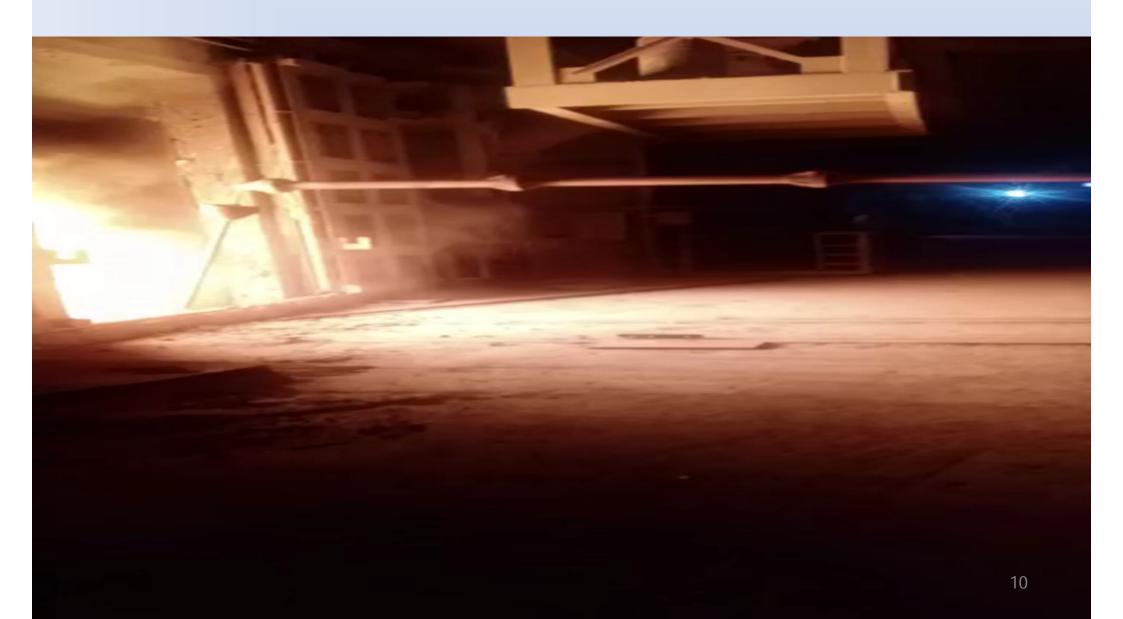
IMPROVEMENT IN VESSEL WELDING WORK

DP TEST ____





SLAG VOLUME CONTROL IN LADLE





DEGASSING TEMPERATURE REDUCED

> CONTROLLED SUPERHEAT IN TUNDISH

> CASTING SPEED INCREASED

> REFRACTORY LIFE INCREASED DUE TO REDUCTION IN DEGASSING TEMPERATURE



MODIFICATION OF CONNECTING PLATE

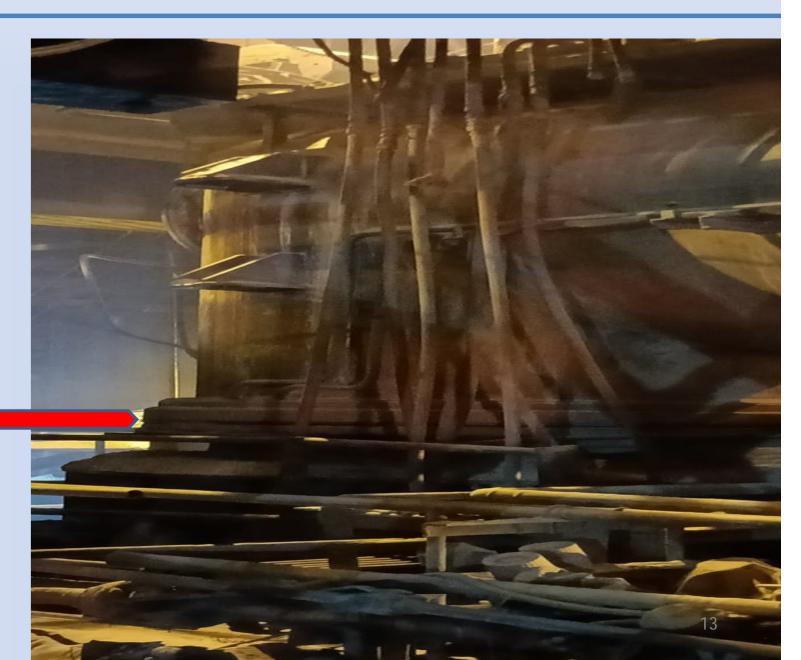
CONNECTING PLATE THICKNESS INCRASED FROM 36 MM TO 50 MM





MODIFICATION OF VESSEL TOP CONE RELINING PATTERN

OFFTAKE & VESSEL TOP CONE JOINT





MODIFICATON OF VESSEL TOP CONE RELINING PATTERN

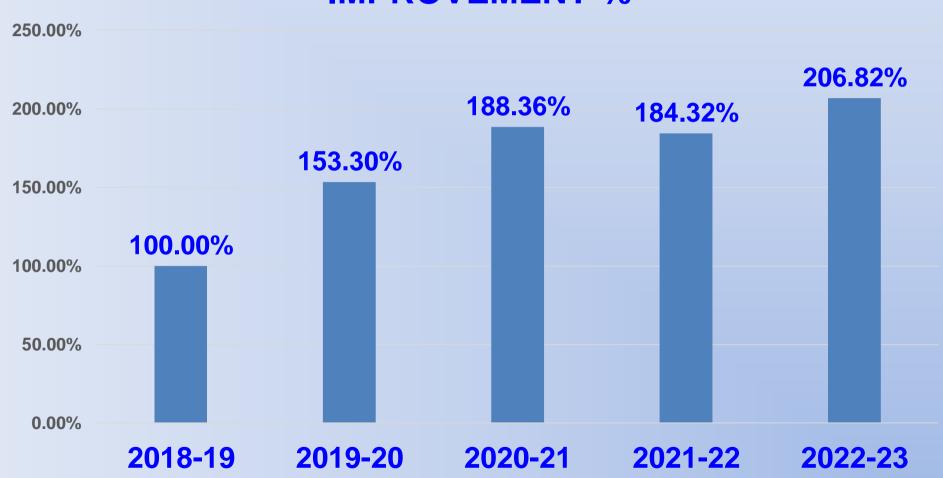
AT VESSEL TOP CONE USE OF CASTABLE AND CERAMIC BLANKET IN PLACE OF BRICKS





IMPROVEMENT IN RH DEGASSER LIFE

IMPROVEMENT %







THANK YOU



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