



Award for TPM Excellence Category – “A”

Jayaswal NECO Industries Limited

Rolling Mills & Bright Bar Unit

1. Organization Profile:

Jayaswal NECO Industries Limited, Steel Plant Division (JNIL-SPD) is a unit of the "NECO" group of Industries. JNIL-SPD is situated at Raipur in Chhattisgarh state, India. It is the flagship unit of NECO group, having an Integrated Steel Plant of 1 Million Ton installed capacity.

The JNIL-SPD was established in the year 1996. It is a successful and fast-growing Steel Plant, under the leadership of Mr. Ramesh Jayaswal, Managing Director. It is spread over 1600 acres of land (39% Green Belt) in the industrial belt of Raipur.

Rolled and Bright Bar Products of JNIL- SPD mainly cater to the needs of the Automobile, Power, Railways, Engineering, and other Manufacturing sectors. Sale-volume wise, JNIL is among the Top 3 Alloy Steel producers in India.

Under the Iron-making, Steel-making and Rolling Mills divisions JNIL-SPD has various production units. TPM Excellence Award Category-A assessment was conducted for Rolling Mills and Bright Bar Unit.

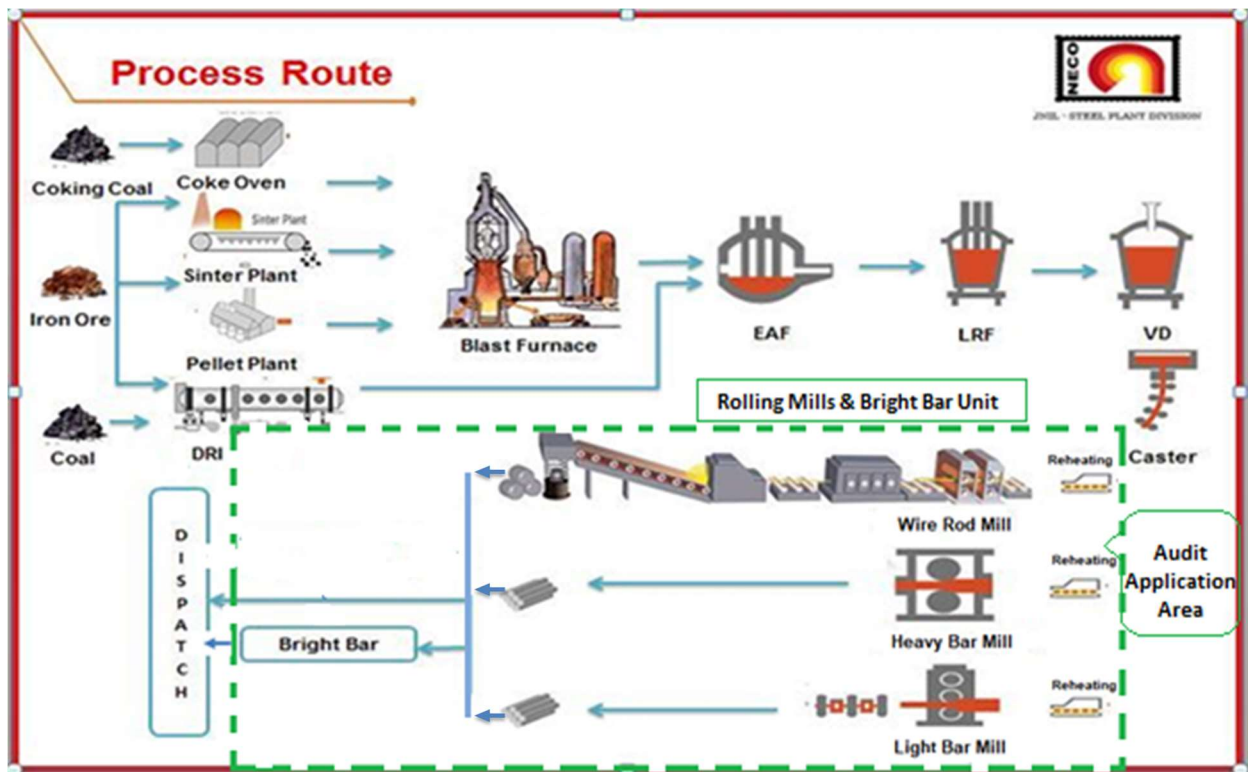
Iron Making	Steel Making	Rolling Mills
Blast Furnace	Steel Melting Shop 1 (SMS-1)	Light Bar Mill (LBM)
Sinter Plant	Steel Melting Shop 2 (SMS-2)	Wire Rod Mill (WRM)
Coke Oven	Oxygen Plant	Heavy Bar Mill (HBM)
Pellet Plant		Bright Bar (BB)
Direct Reduced Iron (DRI-1&2)		
Power Plants: (PP1 to PP5)		

JNIL has 5,606 employees, out of which Rolling Mills and Bright Bar has 1,136 employees (Executives 100, Non-executives 565, Contractor employees 471).

Product & Size Range of Rolling Mills & Bright Bar:

Rounds	23 to 200 mm
Round Corner Square (RCS)	55 to 200 mm
Flat	63.5 x 6.35 mm to 100 x 28 mm
Wire Rod Coils	5.5 to 32 mm in Coil Shape
Coil Annealing- Soft/ Spherodized	5.5 to 32 mm
Bar Annealing- Soft / Spherodized	Rounds 20 to 140 mm & RCS up to 150 mm
Drawing Coil to Bar	Round 5 to 27 & Hex 6 to 14 mm a/f
Drawing Bar to Bar	Round 24 to 52 & Hex 18 to 40 mm a/f
Peeling	Round 20 to 80 mm
Centerless Grinding	Round 6 to 78 mm

Process Technology:



Product Grades:

Steel Grades as per IS, JIS, SAE, EN, DIN, and Customer Specifications.

Forging, Cold Holding Quality, Micro Alloy, Spring Steel, Free Cutting Steel, Bearing, Electrode Quality, High Carbon-Tire Bead & Cord.

- JNIL is One Stop shop for all the needs of Alloy Steel: Rolled and Bright Bar Products.
- JNIL has the highest Bloom size of 340 x400 mm in India, it offers a maximum reduction ratio of Rolled products.

2. Milestone on the Journey to Manufacturing Excellence:

Jayaswal NECO Industries Ltd. is certified for the following Integrated Management Systems (QMS, EMS & OHSAS)

- ISO 9001:2015 (Quality Management System)
- IATF 16949:2016 (Automotive Quality Management System)
- ISO 14001:2015 (Environmental Management System)
- ISO 45001:2018 (Occupational Health & Safety Assessment System)

Major challenges during the quality journey include improving equipment reliability and people competencies at all levels. JNIL adopted TPM to meet these challenges.

TPM was launched in JNIL on 26th January 2019. The main benefits of adopting TPM are:

- Drastic improvement in Quality in WRM to 99.9 %,
- Productivity increased in HBM by 53%,
- Availability increased in LBM by 9.4%.
- Cost Reduction in WRM by 30%
- Improvement in Safe working environment- Zero LTI in last one year.
- Ensure 100% on-time delivery as per order quantity.

Increase in the morale of the team members through participation and a sense of ownership

The TPM journey continued through the difficult times during the Covid period.

Pillar Wise major items introduced in our TPM journey.

Pillar	Major Items introduced.
KK	Loss elimination and Cost reduction activities. Focus on the quick changeover in view of the increase in product varieties.
JH	Improvement & sustenance of Equipment Basic condition by developing Equipment competent Operators. Focus on quality defect sources and minor stoppages.
PM	Elimination of Equipment Breakdown by Shifting from Reactive Approach to Proactive approach in Equipment maintenance. Preventive Maintenance was revolutionized by the development of JMS (JNIL Maintenance System).
QM	Reduction in Customer complaints and Establish a Defect-free Production system. The focus was on the complete elimination of surface defects like scratches.
DM	New product development activity was systematized with the DM pillar concepts. Development of new product grades has become streamlined with lower lead time.

E&T	Skill mapping & Proactive training to eliminate Breakdowns, Accidents & Defects due to Poor Knowledge & Skill. Training Dojo was developed with cut models for Step 4 training, as well as for faster training of functional skills to recruits.
OTPM	Improvement in office work environment and process. Apply cost reduction techniques. Office Losses were identified department-wise and connected with office work pain areas. IT-based processes were introduced to reduce office work lead time.
SHE	Shifting from Reactive to Proactive approach to eliminate Accidents. KYT drill implemented in everyday practice to reduce First Aid cases. Proactive Approach for Health Hazards. Improve and sustain Green Belt coverage.

3. Benefits Achieved:

Tangible Business Benefits:

Productivity	Improvement in Productivity, Availability, Reduction in Breakdown.
Quality	Reduction in Customer complaints, In-House rejection, Rework.
Cost	Reduction in Conversion cost, Improvement in material yield.
Delivery	100 % achievement in delivery.
Safety	Reduction in Incidents/ Accidents, Development of a safe working environment.
Morale	Increases employee engagement.

Employee involvement, motivation, and other intangible improvements


Employee Involvement	Change in attitude. Improved level of communication.
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	Structured and focused way of solving problems. Safe way of working.
Motivation	Fun and joy to work. Positive change in Sense of Ownership. Motivated and higher skilled workforce. Cleaner Greener & Environment friendly plant.

4. Key of our Manufacturing Excellence:

- JNIL is known as the shortest delivery time supplier in the Alloy Steel market of India.
- JNIL can match diverse customer needs in terms of Quality, Cost, and Delivery.
- JNIL offers physical and metallurgical properties as per customer requirements with the lowest ppm of complaints.
- JNIL developed critical grades of Alloy steel as an Import substitute.
- Use of Green Power for production using Waste Heat Recovery.

5. TPM Award Assessment Achievement Sheet (Index Table)

2023 TPM Award -Achievement Sheet					
	Company	JAYASWAL NECO INDUSTRIES LIMITED			
	Plant name	Rolling Mills & Bright Bar Unit (RM & BB)			
	TPM Slogan/Objectives	Manufacturing Excellence Through TPM			
	Year when TPM started	2019	Benchmark	2019-20	
Category	Index (Calculation Formula)	Mill Name	Unit	TPM Started FY-2019-20	Status 2022-23 (Till Dec-23)
S	Number of work-related accidents requiring days off work (Loss Time Injury)	RM & BB	Cases/ year	6	0
S	Number of work-related accidents not requiring days off work (First-Aid incident)	RM & BB	Cases/ year	152	5
P	Productivity for main products	HBM	MT/Hrs.	33.9	51.9
P	OEE (or Overall Plant Efficiency)	LBM	%	68.0	78.7
P	Availability	LBM	%	71.7	81.1
P	Performance Rate	BB	%	96.6	98.6
P	Quality Products Rate	WRM	%	99.4	99.9
P	Number of breakdowns	LBM	Monthly Avg. no's	16	2
P	MTBF	LBM	Hour	45	364

P	MTTR	WRM	Hour	0.92	0.67
Q	Number of customer complaints	HBM	Number/ year	5	1
Q	In-line defect rate Rejection + Non-Prime	HBM	%	0.71	0.03
C	Cost index (Conversion Cost)	WRM	Rs./MT	4194	2920
D	Production Lead time (Planning to inspection)	BB	Days	8	7
D	Delivery performance	RM & BB	%	91	100
S	Safety-index (ex-Lost Time Incident Rate)	RM & BB	Accidents per 1,000,000 operator hours	2.92	0.00
M	Number of Employee Suggestions	HBM	Number/year	46	298