

Reduction in Scratches & Edge Wrinkles Defects in CRM

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Abstract: The Rolling is mostly used metal forming process due to its greater production and great control of finished products. . In the present competitive situation in this world we need to improve our areas in order to stay in the competition. The main concept of this project is to understand the process flow of CRM, and to identify the defects and to improve the defects in order to achieve high production. Two defects were identified. First are scratches and being Edge wrinkles.

To overcome the defects here hydro motor is installed at exit bridle for scratches and proper tension in the coil with suitable modes (deflector or bridle) and maintaining proper tension in the coil for full width.

Keywords-CRM, Scratches ,Edge wrinkles, Defects

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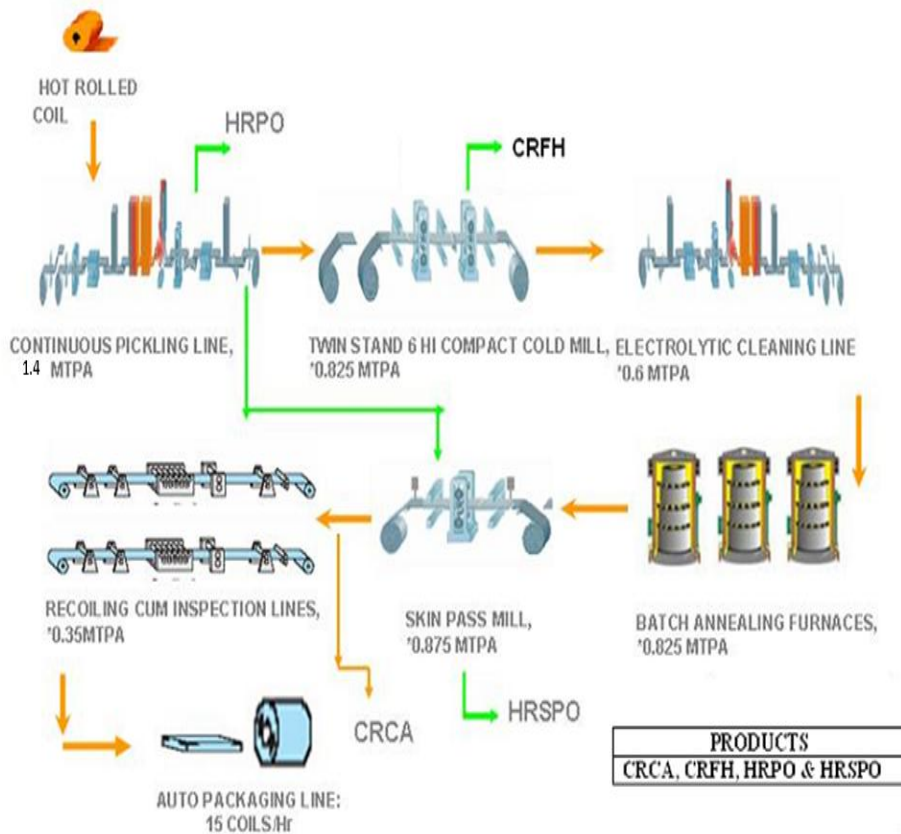
I. Introduction

The Asia's biggest company in India that is JSW India's top most of the steel company is very prestigious group of company of Mumbai in India of the State Maharashtra and it is one of the most bulk producers of the steel with the given capacity of 18 MT as per 2017. The CEO of this multimillionaire company is Mr.Sajjan jindal one of the top most business man of the steel industry in India. The stone of vijayanagar steel foundation was inaugurated by our Late Mrs Indira Gandhi (Ex Prime Minister of India) under public sector in the year 1971. For the more than 20 years later inspite of liberalization of the economic in the year 1992 not even in a single person came forward to complete the dreams of Mrs.Indira Gandhi. Because no one considered it as a valuable thing But time changed the invitation was got from the government of Karnataka in the year 1994 and it was more than challenge for JSW company to accept the challenge from them.

And it was the greatest year of all the time for JSW to complete their dreams and the JSW first Jindal Vijayanagar Steel Limited as JVSL was built in the year 1994 and that is the beginning of the new era. And the company started to plan that is to expand everywhere starting from the south to west and the south india's JVSL and the west india's JISCO both together successfully formed the Jindal south west in the following year 2003 and the power plants were situated in Maharashtra and Rajasthan of Indian state and the plants of the cement factory in the Andhra Pradesh and Karnataka.

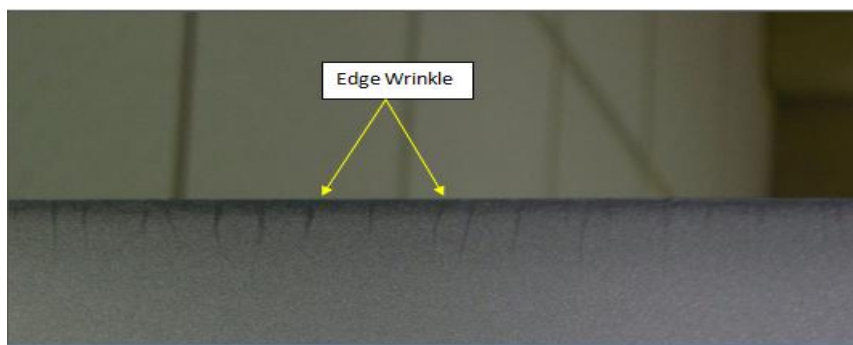
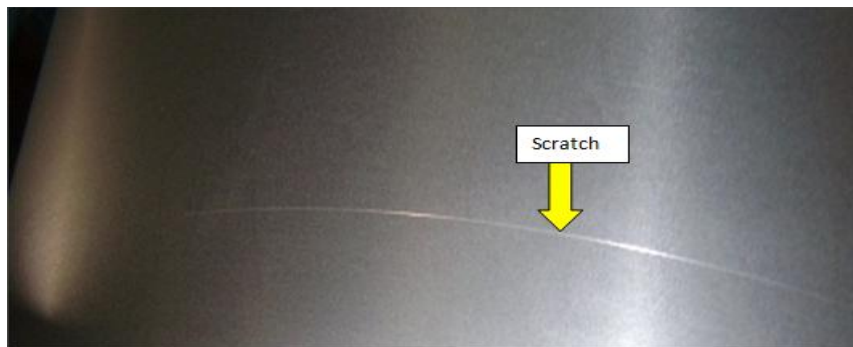
From the tag south west the JSW changed its name as JSW Steel Limited in the year 2005 and they are planning for 300 MT steel capacity for India but by 2025 it will reach definitely 40 MT and there investment for the 1 MTPA steel is Rs. 3500 crores to 4000 crores and 1 MW generation is Rs.2.50 crores to 3.0 crores and they total acquired land is 7775.33 acres land and the total generation of their power is 1791 MW and their source of water from the dam is T. B Dam is 145000 m³/day and the Almatti Dam is 200000 m³/day and it is ranked 10th in the world class steel makers.

II. Material Flow



III. Objective

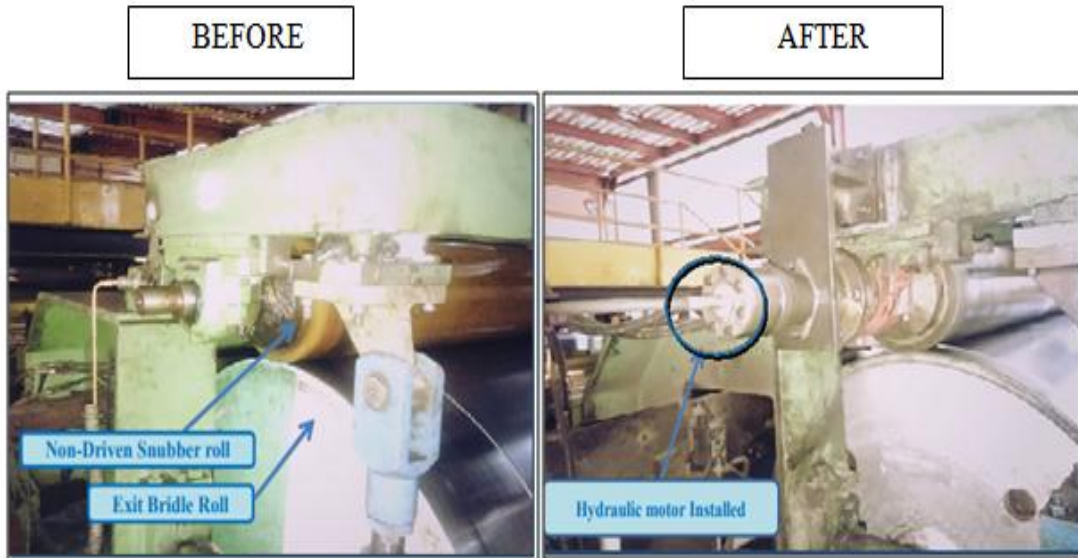
- The main objective is to find scratches and edge wrinkle defect in the coil.
- The scratches is reduced by fixing hydro motors and PU rollers.
- And in edge wrinkles maintaining proper tension in the coil with the deflector or bridle.



IV. Result

Scratches Action No. 1:

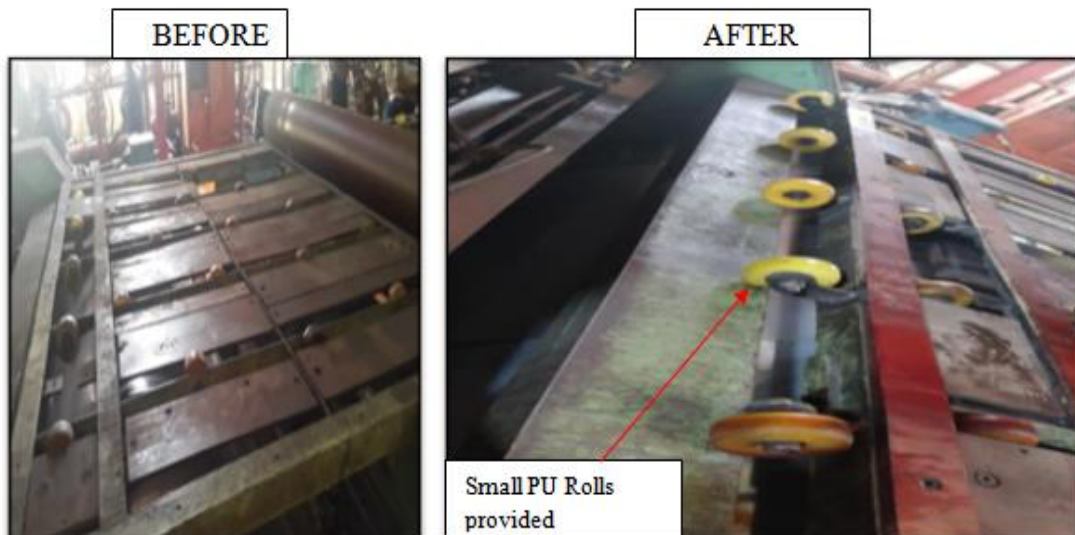
Hydro motor installed at exit bridle Snubber roll



RESULT Reduction 50 % Scrap Rejection due to Scratches at RCL.

Scratches Action No. 2:

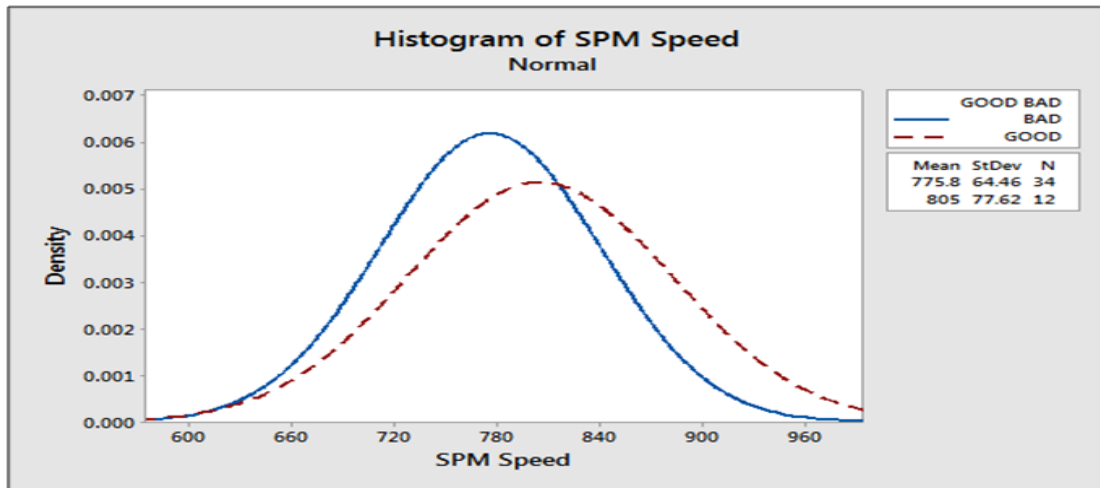
Small PU Rolls Provided to avoid contact with Exposed Metallic Table at RCL



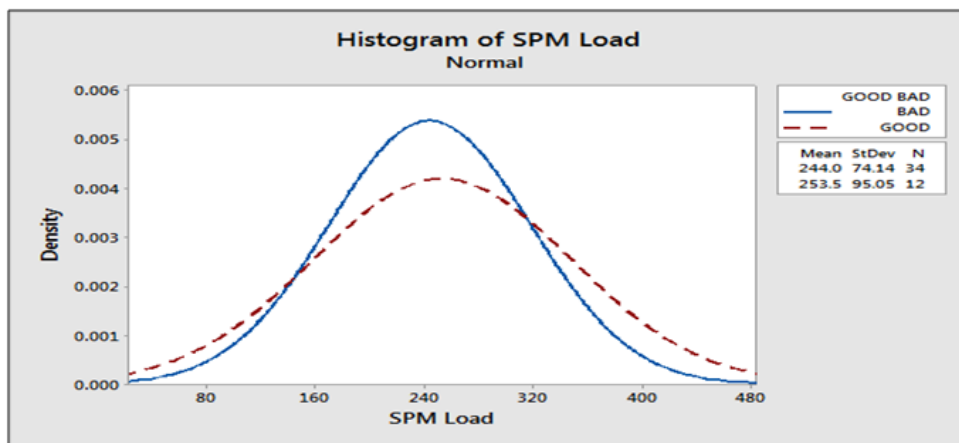
RESULT Scratches generation eliminated during thread recoiler sequence.

RESULT Reduction 50 % Scrap Rejection due to Scratches at RCL .

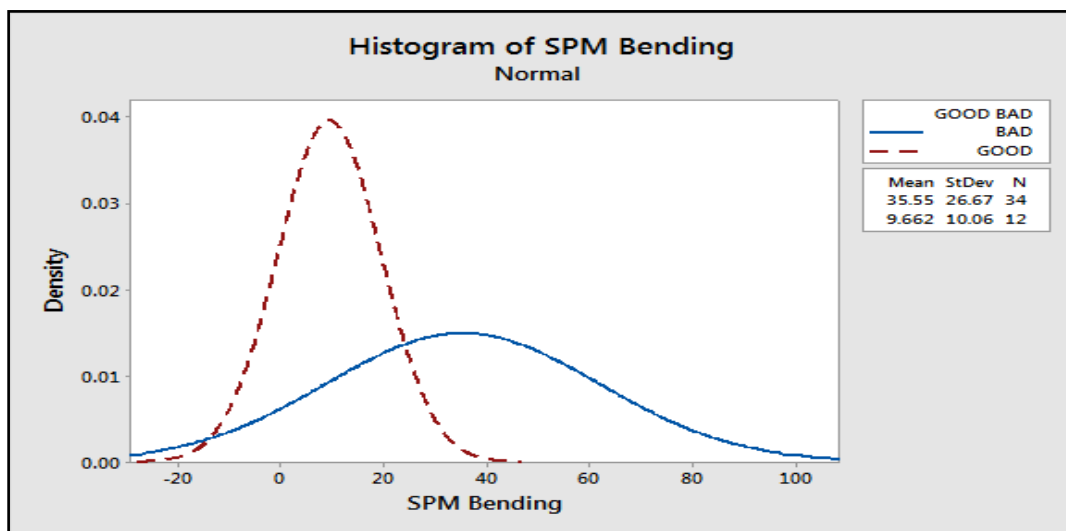
Histogram Influencing Factor Edge Wrinkles



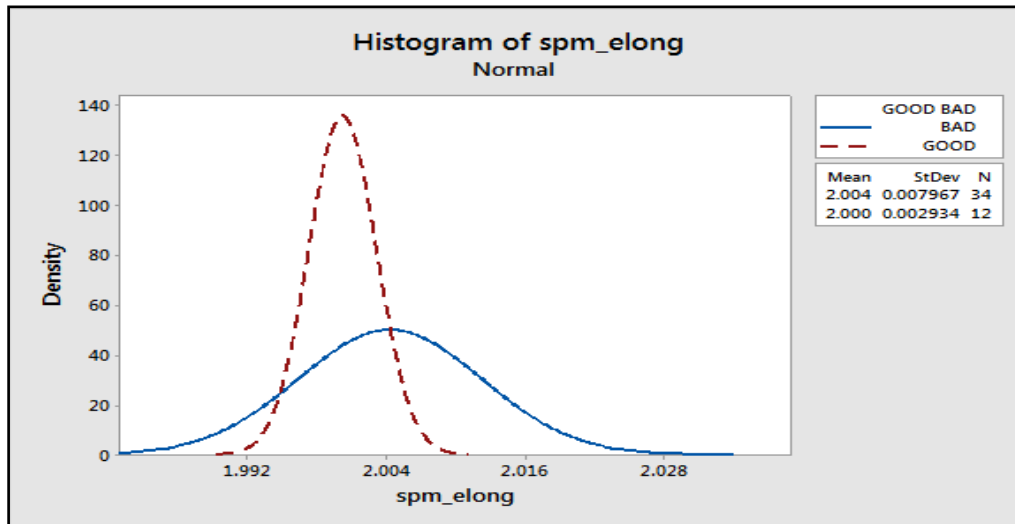
Tendency of Edge Wrinkle is higher if SPM Speed is Lower



Tendency of Edge Wrinkle is higher if SPM Load is Lower



Tendency of Edge Wrinkle is higher if SPM Bending is Higher



Tendency of Edge Wrinkle is higher if SPM Elongation is Higher

V. Conclusion

It was clearly understood and the given problem was identified to achieve improvements in defects. The small PU rolls were provided to avoid the contact with metallic table. The hydro motor was installed at the exit bridle above the Non-driven snubber roll to reduce 50% scrap rejection due to scratches. Scratches generation was eliminated during the thread recoiler sequence. The table must be modified with the FRP coating. The higher load must be achieved at edges with less bending during skin passing.

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