

## 1. Introduction

Demand for special steel has grown dramatically in recent years, centered on the automobile industry. In order to respond to this demand, JFE Steel has increased its steel base and overall production capacity. It is a possible increase of overall production capacity by 40% by increasing the capacity of the round billet finishing line at the Billet Mill and the base finishing line at the Wire Rod and Bar Mill, as well as the hot-rolled process in the 3rd plan. This report introduces the content of the expansion project.

## 2. Equipment Expansion Projects

### 2.1 Billet Mill Round Billet Finishing Line

expansion in the design equipment layout, making it necessary to locate the guide and delivery side of the MMT. After the proceeding, after a inspection by the automatic inspection facility, a new capacity - a connected the end of the guiding line in order to feed the bille of the new guide equipment. The line employed the advance in which a emotional improvement by the guide equipment after changing of the new line and the defective availability after guiding is inspected by MMT, and is laid down to perform repeated guiding by the guide equipment if the defective is detected. A new label made also installed for identification management and equipment management after changing from the existing line of the new line. Taking control improvement in 1 bille line.

In order of the guide equipment and MMT made it possible to increase the end bille finishing capacity. As a result, it has become possible to increase production of bille for the Wire Rod and Bar Mill and end bille for the steel mill, which are manufactured by the Bille Mill.

## 2.2 Wire Rod and Bar Mill Bar Finishing Line

### 2.2.1 Outline of capacity increase

In order to increase the proceeding capacity of the Wire Rod and Bar Mill finishing line, a new dedicated line is connected for small diameter bar (16 mm - 45 mm dia.). Due to lack of space in the existing Wire Rod and Bar Mill, this line is connected in a separate way. The existing bar finishing line (16 mm - 90 mm dia.), which is located in the same way as the rolling line, is called No. 1 finishing line, and the new line is No. 2 finishing line. A No. 1 line, the aim is to increase the operating time after being fed, increasing the flexibility of the change in the inspection facility and other equipment, by using this line as a dedicated line for large diameter rod with diameter of 45 mm dia. and larger. Because the No. 2 finishing line is located in a separate way, it is necessary to arrange the bar. However, direct arrangement of bar after rolling is made possible by installing parallel which are capable of handling a mille (temperature 250 C) and enable an operation after rolling. **Figure 2** shows the layout of No. 2 finishing line. The main features of this line include: (1) material handling is possible using only one crane because the material feed and collection are arranged in close proximity and (2) the material feed bed is located in the central part of the line. Because this line layout feature a Uniaxial inpection line after changing,

ide. **Table 2** shows the main specifications of the 2-roll machine and the inspection facilities. To nonconforming material ejected (MLFT ejected bed, RUT ejected bed) are arranged at the delivery side of the machine in inspection facilities, enabling automatic sorting based on the material of inspection by the inspection facilities. Material which are passed by the inspection facilities are arranged on the delivery side ejected bed, and produced label are attached to the end of the product by a labeler. Labeling is performed in one batch. Batch are changed in a material collecting pocket, in which corresponding number of batch in one bundle, and arranged on the banding machine, which perform banding a 4 to 6 point. The bundle are then discharged to the material collection bed and shipped.

As described above, it is a possible increase the

capacity of the Wire Rod and Bar Mill by adopting a 2-roll line system at the bar line by constructing a new No. 2 finishing line.

### 3. Conclusion

Measure to increase the finishing line capacity of the Bille Mill and Wire Rod and Bar Mill are introduced. As a result of the measure, the finishing capacity of the bar and wire rod division is increased by