Report for Technical Visit to Shanghai on 16 – 18 November 2005

Foreword

The self-financed visit was originally proposed in early 2005 with a view to exchange and sharing of welding & NDT related experience with our fellow counterparts in Mainland China. After detailed planning and liaison, the visit program was finalized which made the visit a definite success.

Highlights of the visit

Day 1 – 16 Nov 2005

Upon arrival at the Pudong International Airport at 11:00 am, the team was well received by the Secretary of The Chinese Institute of NDT, Mr. XU Yong Chong. We were transmitted back to the hotel for early check in before we went to the NDT Exhibition in the downtown.

Some highlights of the exhibition

- UT Equipments & Probes for various applications including different angles were exhibited by mainland counterparts. These probes are more competitive in price and are available for export to overseas market.
- X-Ray machines were among the other competition lines exhibited by mainlanders

- Pile Integrity Tester manufactured in Korea which is similar to the PIT manufactured in the USA, was also exhibited. It is used to assess

the pile defects.

- Ultrasonic TOFD techniques & phased array techniques with multiple angles are used in one scanning to check for local thinning of the hollow tubes on site using computer software.

Day 2 – 17 Nov 2005

AM session: Visit Bao Steel Company Limited

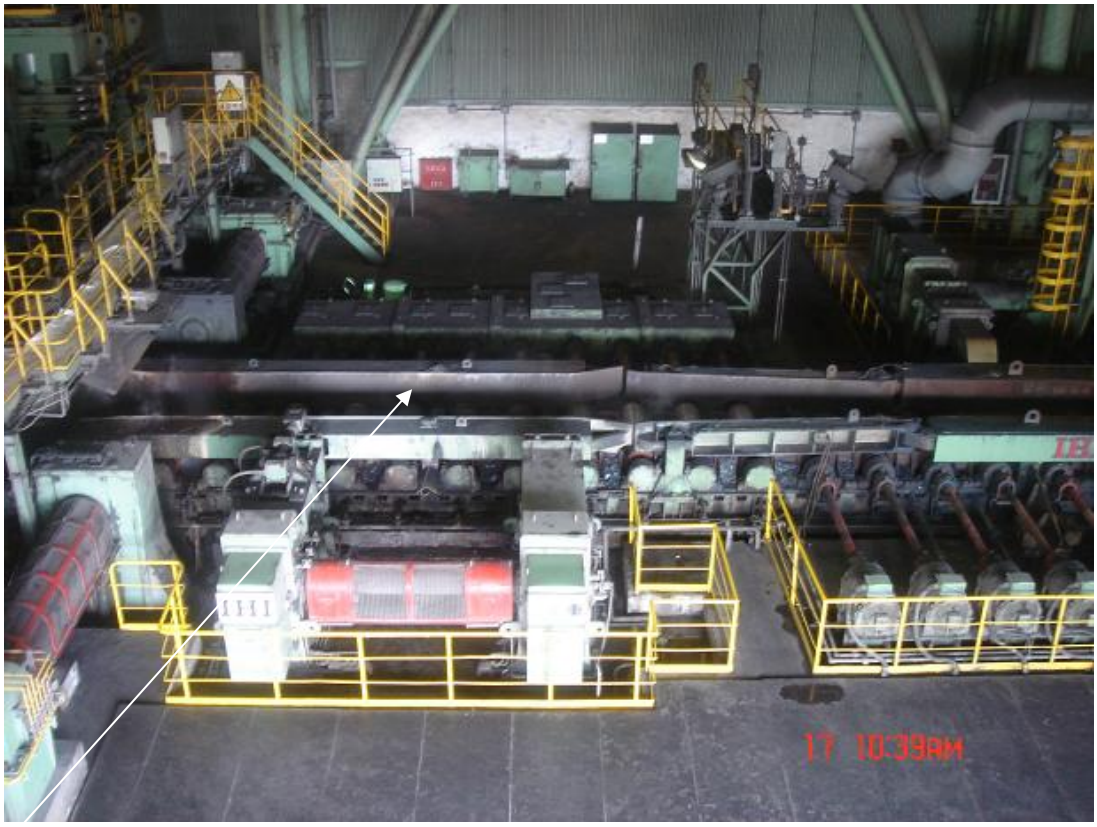
Bao Steel Inspection Team welcomes us with an excellent presentation, and Chairman of Welding group Dr. Chan gave a speech on the exchange program

Team of Delegates during the opening meeting in Bao Steel

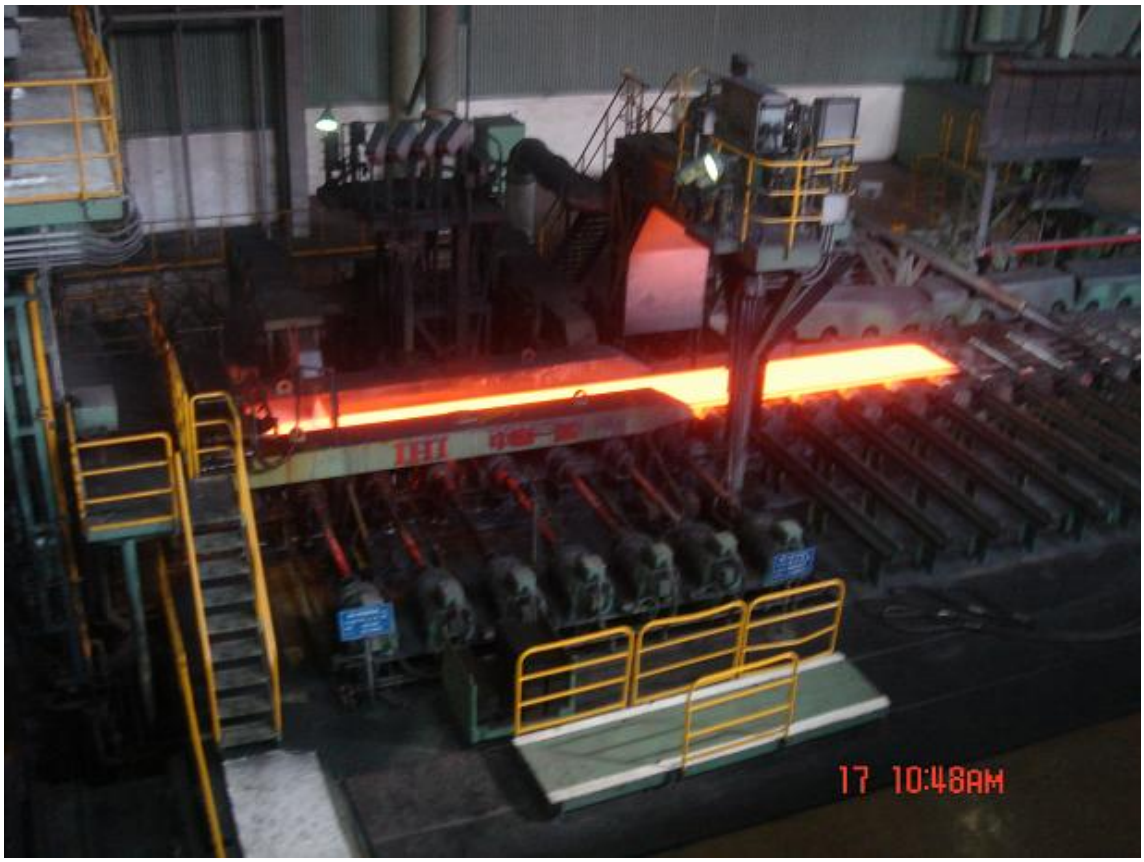
Photography by Mr. Babu

- After the visit of Bao Steel NDT Laboratory, we visited the production line of thin metal sheet at the Exhibition Plant, the Raw Material Receiving Terminal & In house Power Station. The raw steel ore was imported from Australia and Brazil. The raw materials were then transferred to the Sino-Japanese furnace within the site to produce raw ingot for production of plates and sections.

Production line of thin metal sheet: The entire process is demonstrated from an ingot down to the coiling up and cutting of the thin metal steel sheets.



Raw Material or Billet Ready for Rolling



Picture above: Reduction of thickness by Hot Rolling (Rough Rolling)

Resizing in other Rolls

Production of Long thin Sheets (Final Rolling)

Quenching (Coil Cooling)

Final Rolled Sheet Coil, Moving to Storage Area

Storage of Sheet Coils

<u>Production line of steel wire:</u> The entire process is demonstrated.

Production of Wires

PM session: Visit to Shanghai Boiler Works Limited

- Manufacturer of huge size steel pressure vessel. The completed vessel product was displayed.
- NDT using Radiographic Testing. High Energy LINAC (Linear Accelerator of 3Mev) was displayed, which is used to evenly penetrate into 50cm depth of steel generally not permitted to be used in conventional laboratories. The specimen was transport to the Radiography Chamber. Fluorescent Radiography or Real time radiography was used for quick check on pipes welding.

Heavy Casting Ready for Radiograph using LINAC

Linear Accelerator ready for Shooting

- 30m long Heat chamber. Heat treatment was demonstrated to relieve the residual stresses in steel after welding.

Heat Treatment furnace where the Super Heater Coils were placed

Day 3 – 18 Nov 2005
AM session: Visit to Materials Laboratory

- Research of contemporary building services and structures using full size building structures. For example, a full scale building prototype was built to research the effects of solar emission of reflective glass to the building, the various aspects using precast concrete components, the acoustic effect of partitioning in a building, etc
- Exchange. We had an excellent time of exchange in the status of various GB standards in regional basis.

Luncheon meeting: Chinese Institute of NDT

PM session: Visit to Civil & Structural Engineering Dept, Tongji University,

- We had a very good time of exchange and sharing.
- Visit to structural laboratory
- Visit to wind tunnel laboratory
- Visit to seismic laboratory
- Visit to fire laboratory

Concluding remarks

More closer collaboration with our fellow experts in the mainland are recommended for future symposium and training.

Last but not the least, thanks should be given to Mr. Cheung Wai Yuen for his detailed logistic planning and Mr. K M Wong for his arrangement with the factories, without them the visit would definitely not be so successful.

Finally, a vote of thanks should be given to Mr. S K Babu for his great effort in compiling the report, which is very detailed and informative.

Welding Group
HKISC
Dec 2005