Metal Tapping Flow Regulation System – A Large Scale Industrial Experience

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Abstract

One of the objectives through the whole process of primary aluminium production is to deliver a metal free from impurities. During the pot metal tapping, bath can be sucked together with the metal. Unwanted bath tapping has negative effects through equipment soiling, pot disturbance and above all on metal casting, inducing extra costs, delays on metal delivery and metal production losses. Fives ECL developed and adapted a retrofitable patented system based on off-the-shelf components. The system is based on the automatic control of the tapping flow rate, which allows tapping the targeted metal quantity without bath. The Tapping Regulation System was integrated in all aluminium Pot Tending Machines and tapping ladle lifting beams at Sohar Aluminium in Oman where all metal tapping operations have been converted to this system.

Keywords: Metal tapping operation, automatic control of tapping flow, tapping regulation system, quality of metal, casting