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A Systematic Approach to Potline Amperage Creep

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Abstract: Potline amperage creep is a cost-effective way to maximize productivity of existing assets. For more than 10 years, Hatch has been assisting clients to optimize the capacity of their existing smelters by increasing potline current. Amperage creep efforts require careful planning and review. Over the years, Hatch developed a systematic approach based on a deep understanding of the process and of the interactions between plant facilities. Firstly, a study is undertaken involving all stakeholders, smelter operations team and technology supplier to identify the key basic design parameters and establish achievable production targets considering current and future operating conditions. The study covers the entire smelter facilities and identifies capacity bottlenecks. Solutions to reinstate operation safety margins are developed including boosted test section, busbar repairs, pot bypass bridge, equipment upgrades, operations optimizations and additional equipment requirements to restore availability. To develop optimized solutions, Hatch in-house experts employ state-of-the-art process and numerical analysis design tools. Economic analyses are carried out to select the most viable alternatives.

Keywords: Reduction, Amperage Creep, Debottlenecking, DC busbar, Boosted Test Section