Kola Mining-and-Metallurgical Company (MMC Norilsk Nickel subsidiary) is at the final stage of mastering the process of premium-grade marketable cobalt production on commercial scale. Voltage was applied across the electrolysis baths at cobalt production section of the nickel tankhouse. The Company is expected to harvest finished metal in a few days.

Cobalt Production is a strategic project of Norilsk Nickel. Its goal is to build up the first Russian commercial production of premium-grade electrolytic cobalt competitive in worlds markets.

Chloride extraction / EW process developed by the Company's specialists together with scientists of Gipronickel Institute will be used for cobalt production. New process flow-sheet consists of the following stages: nickel electrolyte cleaning from cobalt to produce primary cobalt cake with subsequent two stage chlorine oxidation and cobalt hydroxide precipitation; cobalt concentrate dissolution with hydrochloric acid; extraction treatment of produced solution; cobalt chloride electrolyte electrowinning in electrolytic cells to produce metal cathodes.

Electrolytic cobalt production process was tested in a pilot plant constructed at Kola MMC in 2000. Since 2007 the Company had been using it for small scale production of metallic cobalt. The technology was modified and scaled-up to a commercial plant in the course of the Cobalt Production Project implementation. In particular, piping routing and scheme of hydrochloric acid distribution and feeding system were changed to ensure required efficiency of copper removal from cobalt solution.

Processes, employed in the Project, make use of foreign equipment. For example, cobalt extraction requires preconcentration of salts and chloride ion, which is performed in evaporator manufactured by Ebner, German company. The degassing and compressing system (manufactured by ERG Company) was installed to capture chlorine evolving at the cobalt electrowinning stage and return it to the head of the process (cobalt cake production). Similar ERG equipment will be used for another major investment project "Nickel electrowinning from solutions after chlorine dissolution of nickel powder produced in tube-type furnace". The project is related to the switch to the new technology of nickel production.

In parallel with the technology implementation a number of processing facilities was modernized at Nickel Tankhouse, including two-stage cobalt-removal, hydrometallurgical section No.2; new processing facilities were constructed, including extraction section, electrolysis section, external utilities and racks, hydrochloric acid storage, and auxiliary facilities. All work was carried out without interruption of current nickel production. Investments in the project exceeded RUB 2 billion.

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