CONNECTE

SUCCESS STORIES — NEPAL, UPPER TAMAKOSHI

Nepal – At the end of August 2021, the sixth and last unit of the largest hydropower plant in Nepal was connected to the national grid, marking the completion of an important and prestigious project.

Back in 2012, ANDRITZ received a contract from Upper Tamakoshi Hydropower Ltd. (UTKHPL) for the supply of the entire electro-mechanical equipment for the Upper Tamakoshi hydropower plant on the Tamakoshi River. The installation has an underground powerhouse with a total capacity of 456 MW. Its main objective is to meet Nepal's rapidly growing power demand.

As of mid-July 2019, the dry commissioning of all the six generating units had been completed. As part of the project 49 over-dimensioned consignments were successfully delivered to site, overcoming challenges of building by-pass bridges, multiple handling of equipment, storage and preservation at intermediate stores, and convoy management to cope with bad road conditions. The project also has one of the world's biggest spherical valves with a diameter of 2,500 mm and a design pressure of 87.5 bar.

A FURTHER ORDER FOR PENSTOCKS

Based on the excellent performance of ANDRITZ for the electro-mechanical works, the customer awarded ANDRITZ an additional order for penstock installation and on-site repair works.

In February 2021, the pressure test of the lower horizontal penstock was successfully completed to the utmost satisfaction of the customer. A 377 m-long portion of penstock along with six bifurcators and branch pipes was subjected to 115 bar for 30 minutes with a water volume of 1.4 million m³. The entire lower vertical and horizontal penstock was 100% weld repaired on-site and the bifurcators were repaired, modified, and aligned also on-site. The penstock is designed for a head of 905 m, with a diameter varying from 1.47 m to 3.6 m with two vertical and two horizontal shafts. The upper vertical shaft has a depth of 310 m and the lower vertical shall has a depth of 370 m.

"With 456 MW total installed capacity, Upper Tamakoshi is Nepal's largest hydropower plant. Its main objective is to meet the country's growing energy demand."

The work was very challenging considering the quality issues of the existing equipment, which had been delivered by another contractor, and the difficult site conditions. However, the on-site team from ANDRITZ did an excellent job of not only executing this additional order on time with superb quality, but also building client confidence in the top-tier work of ANDRITZ.

D TO THE GRID

OFFICIAL INAUGURATION BY PRIME MINISTER OF NEPAL

In July 2021, Nepal's Prime Minister inaugurated this project of immense national pride. On the occasion, Deputy Prime Minister and Minister for Energy, Water Resources and Irrigation said that Upper Tamakoshi would contribute 1% of the country's gross domestic product.

By mid-September 2021, all six units were successfully commissioned and handed over to the customer, concluding a remarkable success story.

The successful execution of Upper Tamakoshi once again underlines ANDRITZ' strong market position in Nepal as one of the leading suppliers of equipment and services to the hydro industry, as well as highlighting the company's expertise in project execution and management.

ANDRITZ takes immense pride in being the preferred supplier for the prestigious Upper Tamakoshi project and is very pleased to support Nepal in its energy development ambitions.

TECHNICAL DETAILS

Upper Tamakoshi:

Total output: 456 MW
Scope: 6 × 76 MW
Net head: 805 m
Transmission voltage: 220 kV
Speed: 600 rpm
Penstock length: 760 m
Penstock diameter: 1.47 to 3.6 m

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