

Reference: More Power and Reliability with a SST-400 revamp

Project Description

As one of the leading forest industrial companies, the growing pulp demand worldwide convinced the customer to make several investments to increase the pulp production of their existing mills. Resulting from the mill upgrades, more steam was available and opened up the possibility of upgrading the [steam turbine](#) as well. Thus, the customer decided to revamp the steam turbine in 2017.

The target was clear: During the next Major Overhaul, the turbine should be revamped in order to increase the power output and guarantee operational reliability.

Because of the OEM know-how, the technical expertise, and the clear focus on the customers objectives this order was awarded to Siemens-Energy.

Solution

After the execution of a feasibility study, including thermodynamic calculations, the scope of the revamp was determined. With the delivery of a new manufactured turbine rotor, guide blade carriers, and trip and extraction valves, a higher steam mass flow was accomplished, which in the end led to more power output of the turbine.

The revamp was executed successfully and in time during the Overhaul in 2020. Reasons for the success were the clear technical concept, know-how, expertise as well as the excellent teamwork.

Customer Value

After the Revamp project had been completed, the customer was able to increase the power output of his turbine up to >10%. Furthermore, the new internals led to a higher operational reliability and by reason of the power upgrade, a ROI of under 2 years was achieved.

Characteristics

	Tech. data before revamp		Tech. data after revamp	
	Value	Unit	Value	Unit
Nominal Power	77	MW	85	MW
Live Steam flow	450	t/h	590	t/h
Live Steam pressure (max.)	81	bar	81	bar
Steam temperature (max.)	480	°C	480	°C
Nominal Speed	3000	upm	5800	upm

More power equals more profit

- Product line: SST-400 steam turbine
- Project type: Turbine Revamp
- Year of completion: 2020

