



LETTER OF REFERENCE

Company ZRE Gdańsk S.A. performed a contract for Arctic Paper Munkedals AB for delivery of a TF-1000 turbine with 3108kVA synchronous generator and DN1600 Butterfly valve along with the associated parts to Munkedal Hydro Power Plant. Between 2012-10-10 and 2014-07-19:

Scope of works performed by ZRE Gdansk:

- Delivery of one hi-end ecological horizontal 3,1 MW Francis type turbine in spiral casing with draft tube.
- Delivery of air cooled generator, including automatic voltage control systems: GSV800M12U10,5 (3,1 MVA; 10,5 kV; 500 rpm, air cooling, 26 tons, ball bearings, 120 minutes runaway time, no ladder, no vibration sensors, no oil level sensors, no brake, installation holes for vibration and oil sensors included)
- Delivery of butterfly valve for turbine inlet penstock including hydraulic actuators and counterweight closing system:
- Delivery of one installation joint (1 600 mm)
- Delivery of hydraulic governors:

During the following works employees of ZRE Gdańsk S.A. have shown professionalism and a high level of technical knowledge, performing their tasks according to the schedule and in a professional manner. We rate the quality of performed works as very good.

Due to internal causes the unit has not been installed in our power plant yet, but we assume that the unit works just as well as the work so far has done.

We express complete satisfaction with cooperation with ZRE Gdańsk S.A. and would recommend it as a reliable business partner.

Munkedal/Gothenburg 2014 12 03

Thomas Karlsson
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