M SEALS
- Part of Diploma PLC

Case Study

Wind Power & Energy

Hydropower Unit Overhaul

A customer initially contacted M Seals to request a quote for replacing large diameter rotary shaft seals, specifically sizes 260x300x20 and 300x340x20.

ASSESSMENT

Further conversations with M Seals' technical specialists revealed a problem related to rising water levels and the resulting increase in water pressure. This presented some challenges as the current rubber rotary shaft seals were only designed for a pressure of 0.5 bar and were installed back to back. With this new information, in collaboration with the customer, we decided to replace the seal.

SOLUTION

We switched to a double-acting solid PTFE rotary lip seal (RB31). This seal is designed to handle significantly higher pressures, up to a maximum of 5 bar. The advantages of the RB31 include its ability to handle higher speeds, pressures, and temperatures, and the requirement of just one seal due to its dual sealing lips. This eliminates the need for back-to-back seals, saving space and reducing the number of seals needed. One lip of the seal retains the grease in the bearings and prevents it from leaking into the river, while the other lip prevents river water from leaking into the bearings. This was then immersion tested at our test facility in a saline solution to prove its suitability in the high salt content.

RESULT

We designed and manufactured the parts within just one week, compared to the usual 6-week lead time for standard rotary shaft seals. The seals were manufactured, supplied, and fitted within just one week, enabling the hydropower station to resume operation and continue producing green electricity.

We also provided the seals on an installation mandrel and other assisting rings to assist with the assembly process.

Denmark
+45 49130205
Støberivej 26,
3000 Helsingør

Sweden
+46 35 159940
Industrivägen 17,
302 41 Halmstad

Finland
+358 401400566
Korvenaho 37
86360 Raahe

Poland
+48 724828401
1B/1, Kurpinskiego Street
62-030 Lubon

Leicester
+44 1162754720
Quartz Close, Enderby
Leicestershire, LE19 4SG

Newcastle
+44 1914224200
Unit E Kingsway North
Gateshead NE11 0JH

Sheffield
+44 1142432777
Unit 22-26 Julian Road
Sheffield S9 1FZ

m-seals.com