



Client: Ministry of Works
Consultant: Watson Hauwskly
Location: Tubli, Bahrain
Reff. No.: BAH/2011/03/02/01

002 - RETROFIT & REPLACEMENT OF 2 350KW PUMPS @ ALPHA1 PUMPING STATION

Background

Alpha1 Pumping Station was built in 1980. It is the biggest pumping station that delivers the sewerage from Manama & Al Muharraq to the Tubli Wastewater Treatment Plant. The flow being over 2000 litres per second. It had had two sumps with two 350kW pumps in each sump. After 30 years of service, the pumps had sufficiently deteriorated along with the gate valves and reflex valves. Repeatedly, breakdowns were taking place and it was desired by the client to carry out replacement of the deteriorated equipment.

Case Study

The major challenge in this project was the 'time-factor': to change the pumps and the associated accessories without affecting the flow handling capacity of the station. After extensive studies, the flow pattern of the station was established and it was resolved that one pump at a time can be replaced along with the associated accessories without disturbing the flow handling capacity. To enable this, it meant that at each time, the connection to the rising main will have to be blocked, and this was a critical aspect due to the fact that the outgoing valves of both rising mains were jammed opened. To drain each rising main was a matter of more than six hours, leaving us with only 20 minutes to carry out the blocking operation. This was planned and executed efficiently thereby giving us the chance to remove the existing pumps, build new foundations, and replace all the valve accessories, reinstall the pumps, one at a time, to complete the actual work on site in a period of 90 days.

