

Two Level Pumping: 20 MLD STP at Pune Cantonment Board

A success story at 20 MLD STP

About the Project:

End user	: Pune cantonment board, Pune.
Plant	: 20 MLD STP.
Consultant	: Unity Infracorps, Pune.
Technology provider	: SFC Environmental Technologies Pvt. Ltd, Mumbai.
Turnkey contractor	: Khilari Infra, Mumbai + Aquatech Infra, Pune JV.

The Challenge

Since the plant is located in a thickly populated area inside the city, space is very limited. To address this issue, the technology provider had designed a plant in such a way that SBR basins were built one above the other in a two level structure instead of having all the basins at same level on the ground. This type of design was offered for the first time in India.

Initially, in this configuration two different sized / capacities pumps were considered because of different head requirements of two floors. However, in this arrangement the required standby capacity was not available.

The Solution

After understanding the problem KISHOR team had a series of discussions with the contractor, consultants and the technology provider about various alternatives. KISHOR team suggested to use 5 identical pumps to be used with the help of variable frequency drives (VFDs) to take care of the requirement of feeding raw sewage to two different basins at two different levels and different load conditions.

5 numbers of submersible sewage pumps model ASTRA-SA 200-360 with 75 kW motor were suggested instead of different capacity combinations. In this alternative, the total flow requirement was being catered by 3 pumps with two pumps remaining as standby pumps.

Complete operational philosophy with VFD curves and operating parameters at varying load conditions were submitted to consultants during detailed engineering. The same after approval was given as an input for VFD and PLC.

Initial trials were taken at site immediately after installation which were satisfactory and in line with the operational philosophy.

All the stakeholders (Contractor, End User, Consultant, Technology Provider) are happy about working of pumps and system.

The Benefit

1. Plant could be accommodated within much lesser space than normal.
2. Both the requirements of meeting the flow & head conditions & no. of standby pumps was achieved.
3. With the help of VFD the optimum power consumption was possible.
4. In view of space restrictions for STPs especially in big cities, this arrangement now proven successful is being considered at many STPs in metro cities and KISHOR is better equipped to understand and satisfy correct technical requirements.

The Customer Opinion

After commissioning of the plant, we have had interactions with all related agencies (Aquatech, SFC and Unity) who are happy about the solution provided by KISHOR PUMPS.

