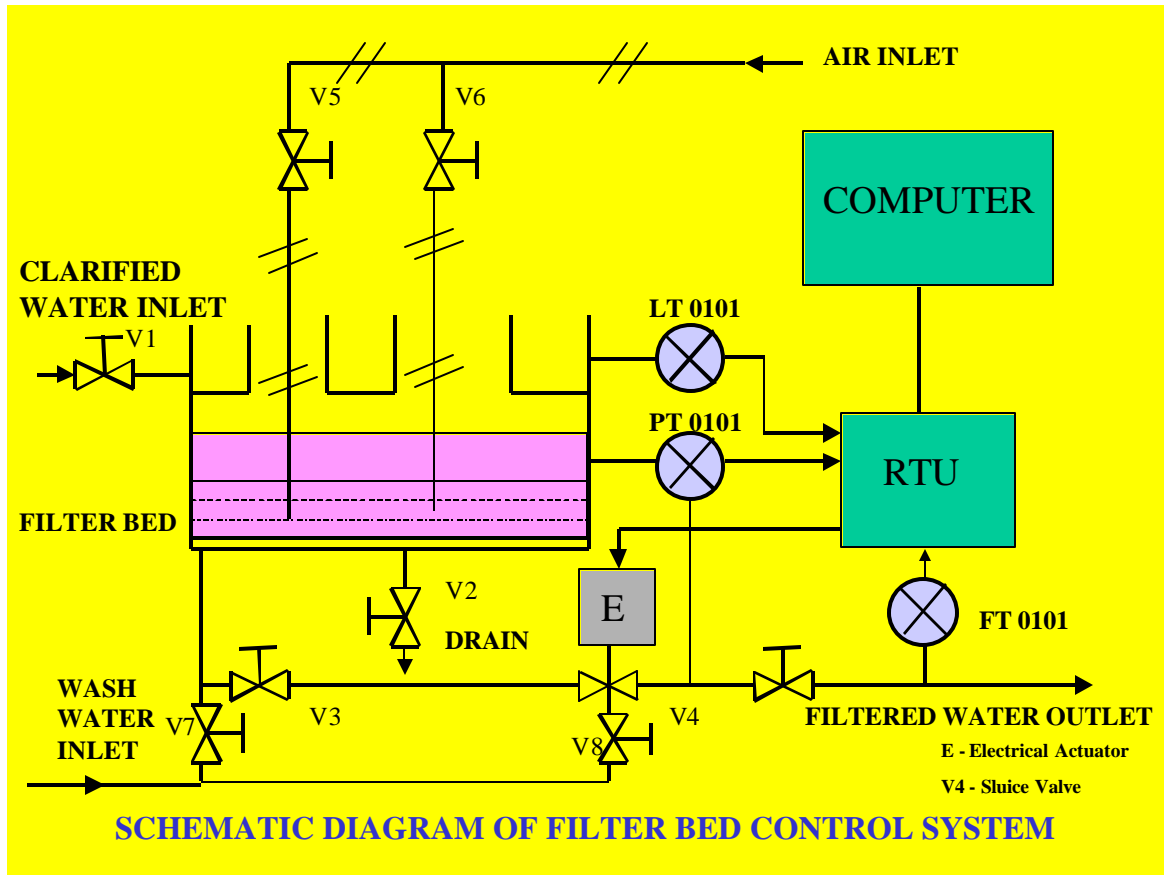


FILTER BED AUTOMATION SYSTEM FOR WATER TREATMENT PLANT AT KERALA WATER AUTHORITY, ALUVA

ER&DCI, Thiruvananthapuram has signed a Memorandum of Understanding with M/s Kerala Water Authority (KWA) on 12th October, 2000 for System Design, Development and Implementation of DAS for Filter Bed Automation of Plant no. III of Aluva Water Treatment Plant. The project involves design, development and implementation of Filter Bed Automation System comprising mainly of acquiring filter bed parameters and controlling flow through the beds and advising appropriate time upon which the manual back – wash is to be carried out. The system considers 50 input – output signals from twelve filter beds. The project is fully funded by KWA at a cost of Rs. 49.50 lakhs.



The commissioning of the project has been successfully completed on 3rd May 2002 and the system is under observation now.

BENEFITS

Right from the day of its installation, the system started bringing in very good results.

1. Better Diagnostics

e.g. Malfunctioning of double beat valve was identified

2. Safe Filterbed Operation

Prior to system implementation, FB delivery was as high as 12 MLD (70% overload) immediately after backwash. Now there is no overload with controlled delivery of 7 MLD

3. Better Quality of Water

Even at 10 MLD, turbidity observed is 2 units whereas at 7 MLD it is nil.

4. Better Productivity

In manual mode operation, within 41 hrs, 10.7 MLD flow came down to 4.2 MLD (Average 5.8 MLD). With controlled flow at 7 MLD, the flow remains constant for 96 hrs.

Productivity increase in 1 FB = 1.2 MLD

Productivity increase in 12 FBs = 14.4 MLD

5. Avoidance of Waste

At 72 MLD production level, there is overflow in the sump tank for minimum ½ hr daily.

Wastage = 1500 KL/day

Cost per KL	=	Rs. 7 (Minimum)
Cost of water wasted daily	=	Rs. 10,500/-
Cost of water wasted monthly	=	Rs. 3.15 lakhs
Cost of water wasted yearly	=	Rs. 37.8 lakhs

With our automation system overflow has been detected and corrective actions taken by operating personnel.

6. Better Logic for Filter Bed Cleaning

7. Saving of Wash Water

1.5 lakhs litres of purified water is used for each backwash. Due to the automation system, number of backwashes is reduced now and hence purified water is saved in large quantities. Frequency of backwash is reduced from once in 2 days to once in 4 days.

1. Registration of Back Wash History

2. Return on Investment

Annual savings due to avoidance of Waste	=	Rs. 37.8 lakhs
Annual savings due to savings of wash water	=	Rs. 10.58 lakhs
Annual savings due to energy saving	=	Rs 1.00 lakh
By avoiding water tank over flow		
Project cost	=	Rs. 49.5 lakhs
Payback period	=	1 year (Approx.)