Real time monitoring and control system for drinking water quality insurance

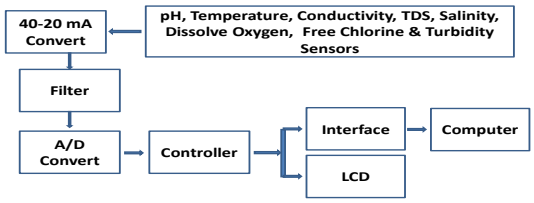
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Abstract

Monitoring and control technologies are indispensable for the production of safe drinking water. They allow for the surveillance of source water quality and the detection of environmental pollution threats, thus defining the boundary conditions for the subsequent treatment and providing early warning in case of unexpected contaminations. They are mandatory for the permanent control of the treatment process and the efficacy of each single treatment step, and they safeguard the high quality of final stage consuming water. Furthermore, appropriate analytical techniques are indispensable for the detection of changes in water quality during distribution and for monitoring drinking water quality at consumers' tap. Reliable monitoring technologies contribute to a large extent to the consumers' trust in a high drinking water quality.

It has been completed and implementation the design of online continuous monitoring system which include electrodes for measuring the pH, Temperature, turbidity, free chlorine TDS, conductivity, salinity and dissolved oxygen. This monitoring system has been linked to the processing drinking water line in Waziriya site-Baghdad city for a period of ten consecutive days and the extent of the work amounted to two and a half hours a day. At the same time samples were withdrawn from the same source for the purpose of laboratory testing and the results were compared to the online results which were gave nearly consistent s between the two tests. The current design might be expanded to include the possibility of adding future sensors to measure bacteriology picture and add Modem for the purpose of wireless signal transmission.

Monitoring System Electrical Parts Block Diagram



The plan of project consisted of purchased and connected the parts of the whole system according to the final layout of proposed monitoring system as a compact panel, and connects this panel to one of drinking water stream (Al Waziriya site was selected for our work) to monitor continuously the quality of drinking water and comparing the on-line results with laboratories results for the same stream of drinking water.

Also this research work included design and implementation of wired signal transmission system that transforms the online results of drinking water to a central control room within distances of 1-250 m.

Refrences

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